The Builder.

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Partnership in Art and Architecture.

SOME remarks which we made recently in regard to the prevalent method of the production of stained glass as a form of manufacture by commercial firms drew forth a letter from an artist in stained glass (p. 304, *ante*) suggesting that the same objection might be made to the frequent cooperation of architects as joint producers of the buildings, the plan and design of which are conventionally attributed to the "firm" and not to an individual mind. We pointed out, in a note to the letter, some reasons for thinking that the cases are not exactly parallel; but the subject is one which seems to admit of some further consideration.

The system of partnership in the production of works of imagination, both in art and literature, receives a good deal of countenance from the practice of the present day. It might be naturally supposed that only a single mind could well plan and relate an imaginary story or novel. But we have seen a notable exception to this in the case of the military novels of MM. Erckmann and Chatrian, in which the result was certainly successful in itself, and in which there was no perceptible effect of patchwork which could have given, to a reader who was not in the secret, any idea that the books were the product of two minds. The Erckmann-Chatrian novels, however, were a type of literary production of rather a special class, since they were in the first place historical novels in which the main events were taken as they really happened, and even some of the principal characters adopted from historical sources; and they were novels written to serve a moral purpose and not merely for intellectual entertainment; and after all (a consideration which says much for the real genius of the joint authors) the majority of readers were probably far more attracted by the real interest of the stories than by the moral supposed to be conveyed. Quite recently we have seen several examples of novels, written purely as stories and to no moral end, jointly produced by two authors; but the leading literary critics of the day do not appear to consider the result satisfactory. In each of these cases one of the two authors has been a man of more marked and recognised genius than the other, and it appears to have been felt by many critics and readers that the resulting book was not homogeneous in style and construction, and that the more powerful of the two writers was to some extent hampered by the association with his colleague. And if we turn to the most imaginative department of literature, poetry, we can hardly imagine the possibility of such a partnership being carried out, nor can we recall any poetic work of the slightest importance which has been put forth as the production of two authors.

In the field of art, as in that of literature, it would seem that the more we approach to purely imaginative work the less is the possibility of partnership. We can hardly imagine the case of two minds being concerned in the creation or sketching out of a work of sculpture, or two sets of hands being concerned in the modelling of it. We have had cases, indeed, of sculptor's "ghosts," but in those cases the ghost was the real designer and modeller, and the ostensible sculptor only a fashionable figure-head. In regard to painting we may have brought against this opinion the indubitable fact of the work of pupils on the pictures of some of the masters of the Renaissance. But here the idea and design at least were those of the master, the work of the pupils being confined to painting in subordinate figures and accessories; and even in this case there can be no doubt that the work suffered as a whole, though (or because) it would be produced in a shorter space of time. We can hardly imagine, in looking at a picture which is such a superb whole as the Bacchus and Ariadne of Titian, for instance, that any but the one hand can have touched it. There have been a good many instances of painters who had differing gifts assisting each other in joint productions; one painting a landscape, for instance, and the other painting in the figures in it, but such pictures have generally been mainly realistic in their aims, and do not belong to the highest class of productions of the art. In the present day the conviction of the importance of unity of sentiment and handling in a picture is much stronger than perhaps in any former period, and no one would expect to get what can in the highest sense be termed a "picture" by the union of two painters. No one could ever imagine for instance, in looking at the paintings of Mr. Davis, in which cattle and landscape form equally important elements, that the cattle were put in by another hand; the unity of colour and sentiment in the whole is too obvious to admit of such an idea. Still less could we imagine it in the case of such yet more ideal pictures as Frederick Walker's, in which the figures and the landscape are not merely in harmony with each other in sentiment and colour, but appear as one conception, an idyllic poem in painting, in which the feeling of figures and landscape is inextricably blended, and the one element of the picture can hardly be thought of as separate from the other.

When we come to such an art as stained glass, there is no doubt one important difference in the position. The painter paints his picture with his own hands, by a process which is not mechanical, but is the exercise of his own individual movement of hand and sense of touch. There is no mechanical work to be done after he has finished. The glass painter may work a good deal with his own hand on the glass itself (with a much less tractable method and medium than the oil painter), but for a good deal of his effect he is dependent on the chemical or culinary process of incorporating the colour with the glass, and for the final result he is dependent also on the mechanical process of leading-up the glass. Thus in the final production of a glass window a good deal of work comes in which may be defined as "manufacture," and as this manufacture can be done more cheaply and expeditiously by concentration of capital and plant and division of labour than by single effort, it is thus that we come to have firms who make it their business to turn out stained glass as a commodity, just as other firms turn out (let us say) carriages. If this business were confined to manufacturing windows from the designs of known artists, it would be a perfectly logical position, though even in that case it may be doubted whether the original design would not suffer from the influence of wholesale manufacture, in the weaken-

ing of the individual character of the design, and in the introduction of too mechanical a level of workmanship; and one eminent designer of stained windows has felt this so strongly that he has practically turned manufacturer himself, in order to have his glass manufactured and set up under his own eye and in accordance with his own perceptions. But of course we know that as a matter of fact the manufacturing glass firms nominally undertake to furnish design also; the window is ordered from the firm just as a carriage is ordered in Long-acre, and though we know that some one man must make the design for the window, we never hear who it is: the individual element in the art is kept in the background. In the case of the best class of glass firms one of the partners is probably an artist and actually designs the windows, though the information that this is so is seldom volunteered; it may be got at by "curious" persons who like to ask questions. In other cases the real designer is a craftsman in the employ of the firm, whose name never appears; or (as described in a letter which we print on another page) a number of "artists" are kept to turn out whatever drawings are necessary to the production of windows. We take the letter of "An Art Workman" to be a description of what may be called the lowest deep to which this kind of traffic in stained glass descends, not as a typical instance, though we have no doubt that the state of things he describes does exist.* But even in the better firms, where there are men employed who may be called artists, this system is certain to lead to the adoption of a mere dead-level of semi-mechanical design, stock subjects treated in a stock manner, which may, when fixed in their place, have a certain value as decorative effect, but which never can have any intellectual interest as design or thought, because they are not produced with that end; they are produced to supply a demand for a certain commodity at a certain price, just as in the case of any other trade.

The essential evil in this system, and that which is at the root of all the rest, is the keeping the real designer in the background; designing anonymously, as it were, and making the production of the design a mere incident of business. No designer will ever do his best, nor put his heart and his enjoyment into the work, when he is deprived of the recognition of his work by the public, and reduced to a mere designing-clerk; and it is almost needless to add that artists of any original and independent genius will never accept such a position. And nothing would do more to put new life and interest into our stained glass work than a resolution on the part of the public to refuse to order stained glass as goods, to insist on commissioning the design from an individual artist, whether a member of the firm or not, and letting him have the personal responsibility of and credit for his art. A cartoon for a window cannot be produced by a firm, it must be the work of one brain and one hand, to be worth anything whatever; and hence our objection to the exhibition, under the name of "art," of windows and window designs which bear only the name of the firm which deals in them, and not that of the man who has really designed them.

It has been suggested that this reasoning should apply equally to the case of architects who are in partnership, and that if we object to a firm for the production of stained glass we should equally object to a firm for the production of architecture. The subject is one on which there is certainly something to be said, though the case, as already observed, is not exactly a parallel one with stained glass. A stained-glass window, though a manufacturing process comes into its production, is a work produced for a purely artistic end; and the cartoon which gives the design is a form of pictorial art which must necessarily be the work of one hand. A building may be required for purposes in relation to which architectural design is necessarily a secondary consideration; and even where this is not the case, the planning and supervision of a building require a good deal of knowledge and experience which is quite a different class of acquirement from that of artistic design. The combination of two minds in the production of a building is therefore not by any means so impossible or illogical a supposition as in such a case as stained glass design. It is obvious, for instance, that such a firm as MM. Fellner & Helmer of Vienna, about whom a good deal was said in our recent notice of the Vienna "Musical and Dramatic Exhibition," are simply experts in the planning and arrangement of theatres, who have acquired from long practice and study the power of arranging and carrying out theatres with unusual completeness and in an unusually short space of time. There is little enough of architecture in the higher sense, in all this; and considering how much scope for architectural treatment a theatre presents, how desirable and how fitting it is that a building which is the home of one form of art should itself be a work of art, it is lamentable to think how very little of architectural art is usually displayed in the design and decoration of theatres. But the fault is with the public. A theatre is a very complicated kind of construction; the public wants above all to have theatres that are comfortable, well lighted, easy to see and hear in, and convenient and safe in regard to ingress and egress and protection from fire risk; and if it gets these it troubles itself little about the architectural design. The manager and proprietors want a theatre with all the best arrangements for scenic effect and for the convenience of the actors, and one which is economical in working; and they want it quickly, inasmuch as all the time occupied in the construction of the building represents expenditure without return. As these are the demands, it is not surprising that architectural firms are formed to supply them, and there can be nothing illogical in that case if the architects form a kind of company or syndicate to supply what is wanted. No theatres that are really works of architectural art will be produced in that way; but it is a matter of supply and demand; and the architectural art is not demanded, and if it were, there is hardly time to produce it.

This is an extreme case; but in a large proportion of the buildings which are produced there is necessarily a great deal to be considered besides the art of architecture. A corporation may very sincerely desire to have an architecturally grand or picturesque town-hall, but they also desire to have it conveniently-planned and well drained, warmed, ventilated, and lighted. There is plenty of work for more than one head here, and it may even be urged that the best probability of such a work being adequately carried out would be where there were two partners in the architect's office, one giving his mind to the plan and design (which are not properly separable) and the other to the technicalities of ventilation, drainage, &c. It is not uncommon to put the arrangement of these latter into the hands of specialists outside the architect's office; but the whole is not likely to be so well or so economically carried out as when all the work is within the direct management and supervision of the architect or architects. This putting together of two minds for the production of buildings in which architectural and practical considerations are perhaps of almost equal importance, is one of the best excuses that can be given for the formation of architectural partnerships. This is a partnership for the more thorough carrying out of work. Other practical reasons which may be named in defence of architectural partnerships are a mutual benefit from economy in regard to offices and staff; or the case where one partner has capital, connexion, or business qualities, and the other has artistic genius. Either of these reasons may apply equally to the case of a partnership for such work as stained glass; the only difference is the one already pointed out, that the latter is more directly and ostensibly a pure work of art, while, in the case of a building, the art is inextricably intermixed with utilitarian considerations. Of course in the case of the union of the man of business with the artistic architect it may be said that the latter is merely the "ghost" to the former, but then he is an acknowledged ghost who practically has the full credit for his work, for where such cases exist (and they are known to exist) it is generally pretty well understood who is really the architectural designer of the buildings. Our correspondent "An Artist," in another letter to us which we did not publish, suggests that there is no objection to architectural partnership where both partners are artists. It appears to us that there is less objection to it and more reason in it in the case we have just supposed, where one partner is the real artist and the other the practical man, because in such a case the part taken by each is easily apprehended and distinguished. Where there are two partners who are both artists, both actual designers of buildings and detail, we have again the old difficulty of loss of individual responsibility for a design. It is hardly possible that one architectural design can be rightly credited to two people, though there may be a certain division of labour in this case which is not possible in cartooning for a window: one partner, for instance, may have made the general design and the other may furnish the full-size sections of mouldings and the detail drawings for ornament; but the unity of expression of the whole, as a work of architecture, is hardly likely to be improved in that way; in fact, we cannot imagine any architect with a real care for his building allowing anyone else to design a single detail of it. In the case therefore where two men who are equally artists in their ideas and ambitions in regard to architecture enter into partnership from motives of economy, mutual assistance, or pure friendship, it appears to us that the only true course is to regard the partnership merely as an arrangement for convenience, economy, or companionship, and for each partner to keep to and to claim only his own work, and give up the fiction that the buildings are designed by "Messrs. Smith & Robinson"; and we believe that, among the younger generation of architects especially, there is an increasing feeling in favour of this view of the matter.

Under its usual conditions partnership in architecture is to a great extent the result of the modern demand for speed in the production of buildings; they are wanted to be "turned out quickly," and two heads, two purses, and a large staff can meet the demand more readily than single resources. For architecture this is a wretched condition of things, but it is no use to deny the facts, and the fault is as much with the public as with the architects. Still there are such reasons as we have suggested in defence or palliation of the system of architectural partnership. But we cannot deny that the system is one which is essentially at variance with the highest conception of an architect's calling. It is a system entirely of modern creation. In Gwilt's list of architects of former centuries we do not find records of the work of "Signori Scamozzi & Serlio," or "MM. Mansart & Perrault"; and we should have rather a different impression about that very individual architect Wren, if he had taken (say) a son of Inigo Jones into partnership, and if St. Paul's were credited in history to "Messrs. Wren & Jones." And it is impossible not to see that this question of partnership is not without its relationship to the question of Professionalism *versus* Art in architecture, about which so much is being said just now. While not without its valid reasons and excuses, partnership is a kind of arrangement which belongs essentially to the professional view of architecture. And in this

* We received one day a request from a firm of plumbers and sanitary appliance people to illustrate a window designed in and issued from their shop.

respect it is significant that out of the eleven architectural contributors to the book we reviewed last week, in which at any rate a high standard of architectural art is set up, only two are partners (one of those in rather a modified manner). The other nine are independent artists, putting their own individuality into their work, and in this manner at least practically exemplifying their own principles.

THE PARLIAMENT HALL: EDINBURGH CASTLE.

THE fine old hall of the palace-fortress of Edinburgh has now been opened to the public, the key having, on the 18th inst., been handed over to the Princess Louise (on behalf of the Crown) by Mrs. Wm. Nelson, widow of the munificent restorer. This is the second important work of restoration which Edinburgh owes in recent years to the wealth and public spirit of her literary merchant princes, Dr. Wm. Chambers having restored St. Giles Cathedral a few years previously. Neither of these munificent citizens, unfortunately, lived to see the completion of his work; but it is not easy to conceive a finer method of keeping green a rich man's memory amongst his fellow-countrymen. For centuries the civic life of Edinburgh centered round the old High Kirk of Sanct Gil; and for a century and a-half at least, during the dynasty of the Stuarts, the life of the nation may be said to have centred largely in the "Magne Camere" of Edinburgh Castle. After the political union of England and Scotland in 1707 the hall must have fallen into disuse and neglect, until its very identity was lost sight of both within and without. Latterly it was used as the garrison hospital, divided up into floors and rooms; while, on the south side, whence once the Court had watched the gathering for Flodden, projected picturesquely (it must be admitted), but most incongruously, the hospital sanitary annex. Explorations in 1883 by Colonels Gore Booth and White, with Lord Napier and Ettrick, practically re-discovered the old hall, still existing in spite of defacement; and in 1886, Mr. Wm. Nelson, the publisher, who had just restored the Argyll Tower of the Castle above the portcullis gateway, undertook the complete restoration of the old "Parliament Hall." The work, entrusted to Mr. H. J. Blanc, A.R.S.A., has, it is needless to say, been exceedingly well done, the fine old mullioned and transomed windows to the north and south having been carefully deciphered, so to speak, and opened out; those to the south are characteristically double-transomed, and from the precipitous Castle-rock dominate the old city very nobly. At the east end the flue of the old fireplace was discovered behind modern building up, besides, it is stated, fragments of the old chimney-piece itself. These do not seem to have been incorporated in the massive new chimney-piece designed by Mr. Blanc, which is itself a fine and suitable piece of work. Exception must be taken, however, to the statues corbelled out from the great sloping stone-hood. Not only are they modern and somewhat incongruous in treatment, but they distinctly diminish the apparent size of the whole chimney-piece. Whether the carved corbels of Linlithgow and other fireplaces were for statues, or, as is generally supposed, for lamps, is perhaps a moot point; but the statues here seem scarcely a success, though in subject they are graceful and appropriate, being suggested by Dunbar's poem, "The Thrissil and the Rois." The walls are panelled in oak for some 14 ft., the upper panels being treated in rich perforated tracery. At the west end are the screens. The whole of the elaborate woodwork is treated in old Scotch character, but the lower part of the screens is robust almost to exaggeration. An interesting souvenir of the past is to be seen in the carved shutter-boards to the lower windows only, which were common enough in old Edinburgh, though it may be questioned if they originally had a place in the Palace Hall. The old hammer-beam oak roof has remained as erected by James IV., requiring, it is stated, but a minimum of repair; both it and the walls are skilfully decorated. At the foot of the common rafters are small shields blazoned with the arms of the Governors of the Castle up to this century, which greatly relieve the somewhat too sombre trusses and lighten up the wall-head well. In the windows are blazoned the arms of the Scottish Kings, as also those of the Regents and the Scotsmen who have made their country's history. The shields are extremely well done, but the geometrical grisaille backgrounds are somewhat dull; they contrast not quite successfully with the brilliant, if rather confused, armorial window recently erected in the Montrose,—or Chepman,—aisle of St. Giles Cathedral.

The daïs of the hall is not raised, this having been apparently its original condition; the old door remains that gave entrance to the Royal apartments in by-gone days, as well as the small eyelet hole that lighted a stair in the south-east angle. The hall has now been decorated with a considerable collection of armour, gathered by Major-General Lyttelton Annesley, but no pieces of this would seem to date back to beyond the end of the sixteenth century. It is hoped, however, that the College of Heralds in London will send the sword and dagger worn by the unfortunate James IV. at Flodden.

The fine old hall, as now handed over to the nation, is redolent of Scottish history. It dates from the time of James I., A.D. 1434, as attested by the Exchequer Rolls, though remodelled, perhaps, and re-roofed by James IV. towards the end of the fifteenth century. Mr. Blanc, however, believes the substructure to be much older, and it may, perhaps, reasonably be assigned to the time of David II. (about 1360), who built the gate tower, as it exists in part to this day. Here James II., the boy of six, was proclaimed King after his father's brutal murder at Perth in 1437; here, a few years later, he saw the young Earl of Douglas (a lad of eighteen) and his brother, and Sir Malcolm Fleming, treacherously seized and murdered by the Chancellor Crichton at the dreadful banquet of the Black Bull's Head. Here James III. must often have sadly banquetted, a prisoner. Here James IV., the re-builder, who began, too, the palace proper of Holyrood, held his wedding festivities with Margaret Tudor; his cypher is upon the corbels that support the roof to-day. Hence he watched the tourney on the "Barrace" many feet below (long since built over); and hence he saw his army muster on the burgh-moor to the south to march forth to the wreck of Flodden. Here James V., a little boy, must often have held high romp with his faithful tutor, Sir David Lyndsay, as recorded by the latter in some of the most touching of his verses. Mary of Scots, his daughter, was often here; in a room close by her mother, Mary of Guise, died in 1560; and, six years later, in a tiny room just to the eastern of the hall, was born James VI. Charles I. and Cromwell, Charles II. and the Duke of York, his brother, have all feasted within the walls that now have, thanks to the generosity of a private citizen, been restored to their former grandeur. It is deeply to be regretted that the great hall of Stirling Castle, as intimately linked as this with Scottish history, should still be abandoned to barrack use; at present it is as grievously defaced as was, till a year or two ago, the great Parliament Hall of Edinburgh.

ENLARGEMENT OF WESTON PARISH CHURCH, NEAR BRISTOL.—The enlargement of the Parish Church of All Saints', Weston, is now proceeding, and on the 18th inst. the corner-stone of the new building was laid. The church is to be enlarged by a north transept, a south transept, and an extension of the east end, thus giving accommodation for 200 more worshippers. At present the church is provided with high box pews, which are to be replaced by modern seats. Mr. Harbottle, of Exeter, is the architect, and Messrs. Stephens & Bastow, of Bristol, are the contractors. The estimated cost will be about 4,000*l.*

NOTES.

IN the words of Artemus Ward, we may say that "the great American eagle is screaming all over the length and breadth of that bright and beautiful land," for a speech more full of American brag and "bunkum," and more essentially vulgar in what may be called its æsthetic tone, than that of Mr. Depew at the dedication ceremony of the Chicago Exhibition, it would be difficult to imagine. Even in regard to Mr. Depew's celebration of the social and commercial importance and the political stability of America, which are justifiable subjects of satisfaction up to a certain point, one cannot but reflect that the country has also the questionable distinction of having one of the most corrupt of all civilised Governments. But the artistic part of Mr. Depew's speech, judging from what the *Times* reports and what it appears to suggest in regard to the unreported portions, betrays an ignorance as to what constitutes the artistic greatness of a nation which we had really begun to think America had left behind. If we are to take Mr. Depew, however, as representing the national sentiment, it would seem that Americans, *en masse*, still believe that size makes the greatness of a work of art; that the fact of their meeting in a building larger than any that has before been covered by one roof puts them on a pedestal above the Greeks, with their foolish little Parthenon; that the superior size of the Chicago Exhibition buildings over the Paris ones is a proof of their superior excellence, and that the Chicago Exhibition is to be the greatest and best that has ever been held because it is the biggest. We really had begun to think that America had been educated to a higher point than this; but it seems a delusion. There is a small minority of Americans, no doubt, chiefly those who have come under the influence of France, who understand what art means; and they will probably be among the first to laugh at Mr. Depew's heroics, which are not calculated to attract the more sober-minded and cultured Europeans to the Chicago function.

THE Board of Trade inquiry into the Canal Companies' rates and charges has not attracted so much attention as did that concerning railway rates, but it must be of considerable importance to many traders, nevertheless. The principal canal companies have lodged revised schedules in accordance with the terms of the Act of 1888, the consideration of which was commenced at Westminster Town Hall in May last. On that occasion fourteen sittings were held, and only two schedules disposed of prior to the adjournment; and the proceedings were resumed before Lord Balfour of Burleigh and Mr. Courtenay Boyle on Monday last. The companies appear to have acted upon the principle of making good provision for a rainy day, for the tolls proposed in some of the schedules would bring the charge for canal transport up to a higher figure than the rates recently authorised for railways. We do not know how far the charges hitherto made by canal companies may be below their existing statutory powers, but these charges are very much lower than those proposed in the schedules. The effect of the Inquiry will doubtless be to considerably curtail the "margin for contingencies," as was done in the case of the railway schedules. This week's proceedings commenced with the consideration of the Birmingham Canal Co.'s schedule, after which comes the Warwick and Birmingham Canal, and then the Regent's Canal; but as certain questions have arisen necessitating a conference between the Railway Association and representatives of the traders, it appears probable that the inquiry will still occupy a considerable time. The extent to which railway companies can legitimately influence canal charges seems likely to enter largely into the question. The Birmingham Canal Company, for instance, is guaranteed a dividend of 4 per cent. by the

London and North-Western Railway, who have the right, under an Act of Parliament, of determining whether any of the authorised canal tolls shall be reduced.

THE Turners' Company's annual exhibition of wood and pottery hand-turning, which has been open at the Mansion House for three days this week, is the twenty-third successive one that has been held. The exhibits were arranged in the ball-room, and comprised many articles of wood turning in hard and soft woods, and articles of pottery, either terra-cotta, stoneware, earthenware, or porcelain, which were required to exemplify pottery thrown on the wheel, turned pottery, and turned pottery ornamented with incised work or glazed or coloured. The list of prizes was an exceedingly good one, and has been contributed to by the Court of the Company and by individual members of the Court. The Baroness Burdett Coutts offered 20*l.* The award of prizes in the wood turning rested with Messrs. J. J. Holtzappfel, Howard W. Elphinstone, R. C. Rapier, and A. H. Bevan; whilst the judges of pottery were Sir Douglas Fox, Colonel A. J. Copeland, Mr. Wm. Brindley, and Mr. J. C. L. Sparkes. The work submitted is mostly that of workmen or their apprentices, and the pottery exhibits are more numerous than those of wood. It is to be hoped that another year more space may be found for the exhibition. The difficulty of examining the merits of large vases placed three deep on a flat table is great, and it is only due to competitors that their works should be properly shown. The character of the work is very varied, and the really excellent exhibits are comparatively few. In the pottery division want of proportion and bad outline are too often conspicuous; whilst in the wood turning, in too many instances, difficult and tricky workmanship appears to be aimed at rather than the attainment of beauty by more simple methods. Amongst the wood exhibits the first prize has been taken by Mr. J. Lewinton, for a graceful pair of tripod lamp stands and a pair of flower vases ornamented with inlay. In the division for pottery the judges decided not to award the first prize in Class A, because the knowledge of form and proportion displayed appeared to be inadequate. In Classes B and C the work was of a better character, and some very good work in inlaid clays and mottled clays were noticed. A potter's table formed an interesting part of the exhibition, and Mr. Askew excited much interest by his admirable execution of turned potter's work. We foresee a great future for this kind of exhibition in encouraging the craftsman; and in our opinion too much care cannot be bestowed by the authorities in encouraging the workmen to work to true artistic principles.

THE question of the date and significance of the "Apollo Belvedere" is a well-worn one, but it will probably never cease to interest both artists and archæologists. Dr. Winter, in the current number of the Prussian archæological *Jahrbuch*, offers what seems to us a valuable contribution to the literature of the subject. Setting aside the question what the precise action of the figure is,—*i.e.*, whether the god is shooting a bow or shaking an ægis,—he examines the pose,—we might almost say the *poise* of the statue. The most casual observer must have noted the extraordinarily airy gait of the god; the way he seems rather to fly than to walk. It is, indeed, to this peculiar poise that much of the dignity and grace of the figure is due. Recent investigations have shown with increasing clearness how successive advances in the art of sculpture among the Greeks were marked by successive masteries over postures of increasing difficulty. Polycleitos throws the weight of the body on one leg, Pæonios achieves a figure flying down. Dr. Winter points out how Leochares (in his statue of Ganymede and the Eagle) devoted his efforts to the figure flying up; and the juxtaposition of the Ganymede and the Apollo show convincingly how the whole pose of the Apollo is inspired by this upward motion. The original of the Apollo was, Dr. Winter holds, due to the impulse given by Leochares.

IN the course of a paper read at the meeting of the Salford Royal Museum and Free Libraries Committee on Tuesday, Alderman W. H. Bailey gave the following information as to the working of the Technical and Industrial-Art Libraries of Paris, which we recommend to the attention of those concerned in the management of similar institutions in this country:—

"These libraries, also under Municipal control, are in the artisan districts of Paris; at present they are ten in number, some of which, however, are only sections or departments of the other free libraries which I have just described. Book patterns, prints, drawings, and photographs are lent out; the chief aim of the administration has been to keep on the shelves of the library material in the shape of books and engravings of interest to the particular trade of the district; for instance, in one district we visited, cabinet-making seemed to be the chief occupation, and in the library there nearly everything of utility or beauty made of wood and perpetuated in the pages of any literature may be found on the shelves, which can be made valuable to the poorest man who has to earn his living by making graceful furniture.

The most important of these institutions is the Forny Library, founded in 1886 by a legacy of 200,000 francs presented to the City of Paris by H. Aimé Samuel Forny. By means of liberal grants from other private and public sources this Institution has become of great value as a general institution for the promotion of industrial art. It has two departments, one for lending out books and designs for home work, and the other department in which specimens, models, and illustrations of great value may be copied in the building itself.

The peculiar feature of these industrial libraries is the manner of distributing thick costly books of plates of ornamental design, which are often very heavy, and for the most part contain information beyond the scope or desire of the borrower. These are cut up and divided into a number of books; all those relating to iron and metal are put between cardboard backs of a certain colour; those relating to textiles and embroideries in other backs; architecture in others, and so on. The colour of the cardboard backs indicates the class of design; frequently one volume is made into twelve or more, and thus a book is made of great utility with an increased circulation by this simple method."

WE are glad to see that the London County Council has been urging on the various local authorities of the metropolis the necessity and importance of providing public mortuaries and Coroners' Courts where such conveniences do not exist. A committee of the Vestry of Mile End Old Town has just reported recommending that "having regard to the letter of August 10, 1892, from the London County Council, with reference to providing a Mortuary and Coroner's Court in the district, your Surveyor be instructed to report on suitable sites for that purpose, and also for the purpose of a mortuary only."

WE are becoming accustomed to see a very varied programme at clerical congresses; in fact, having regard to the clear and well-ascertained methods of clerical work, which need no pointing out, it is, perhaps, allowable to suggest that more work and less speech would be desirable. If, however, all kinds of subjects are to be introduced at clerical meetings, the members of the Uxbridge Ruridecanal Conference may be congratulated on the fact that the reading of a paper on "The Housing of the Poor in Agricultural Districts," and a discussion thereon, occupied the main part of the time of the Conference. The paper appears to have been a plain and sensible explanation of the chief sanitary requirements of a cottage-home, as was natural from the fact that Mr. Roberts, who read the paper, is a Medical Officer of Health. But the exposition of these well ascertained truths, which require to be daily pressed on the attention of clergy and laity alike, in a popular meeting, is of the utmost use. We should be glad to see clergymen place themselves more in the forefront of the sanitary movement. No class of men can do more than they in impressing on cottagers and others the value and necessity of following a few plain elementary rules of sanitary science. Many of the parsonages in rural England, however, are, we regret to say, very imperfect in sanitary details, and, like charity, sanitation should begin at home. But that makes such papers and discussions as the above of still greater value.

A CORRESPONDENT of the *Times* suggests in that journal the desirability of a Parliamentary inquiry into the working of the Acts relating to building societies. As the Legislature so long ago began to regulate building societies by Act of Parliament, the principle of legislative interference in their management has long been an established fact. It is equally clear that a number of these societies have not been prudently managed, and a large number of persons have consequently lost the savings of many years of labour. A case is thus clearly established for a Parliamentary inquiry with a view to the amendment, if necessary, of the Acts affecting such societies.

GERMAN architects have recently been invited by Herr Krupp, of Essen, to compete for designs for a large number of artisans' dwellings he wishes to erect near his great iron-works. They are intended for invalid workmen and pensioners, and not only are they to be practical in plan, but it is required that they should also be pleasing in design and architectural appearance. According to statistics of 1888 Herr Krupp employed a staff of 20,960 men on his works that year, who together with their families formed a colony of 73,769 persons. Of this number 12,723 lived in houses owned by the heads of their respective families, and 24,193 in tenements rented from Herr Krupp. This great employer of labour has by this time built every class of home for the different grades of members in his staff, from the villas for his senior officials, placed in a fashionable road, to the simple barracks for the unskilled bachelor labourer. A tour through his extensive estate will show the visitor every kind of philanthropic institution, technical and elementary schools, co-operative stores, fire department, &c. The enjoyment of his workers is provided for in the officials' *casino* and in the subsidised theatre lately opened; nor are a stranger's wants uncared for, as he will find a good hotel of model management. Throughout Herr Krupp's large property at Essen, murky as it is, there are, however, ample proofs of energetic and systematic attempts to beautify the worker's home and leisure surroundings as far as is practically possible by means of simple architectural decoration; and if now, after reading the competition regulations for the proposed dwellings, it strikes the business-man that Herr Krupp is, perhaps, excessively liberal, it would be well to refer him to a financial statement which shows that, in spite of the architectural treatment, such houses can be built to bring in an income of 2 per cent. on the capital sunk, and that Kerr Krupp can derive a fair return from his philanthropic erections without neglecting architectural embellishment.

SIR EDWARD WATKIN, who appears to be able to secure Mr. Gladstone to advertise his railway projects whenever he desires, in spite of the Prime Minister's public engagements, had one of his show days last week, when Mr. Gladstone cut the first sod of the Wirral Railway, which is the last link to be completed in order to finish the line of railway which will directly connect Wales and Liverpool. There is no doubt that this connexion of Wales and Liverpool is one of considerable importance, but we can scarcely regard it as one of such importance as Mr. Gladstone would seem to suggest. It will undoubtedly give the inhabitants of Liverpool quick access to the watering-places of

Wales, and will thus give some impetus to trade on the coast line of Wales. Mr. Gladstone spoke of the communication "with Liverpool and all that lies behind it." But behind Liverpool there is nothing but the coast line if we look at this port from the estuary of the Dee. The real line of communication between industrial Lancashire, other than Liverpool, and Wales, is by way of Runcorn. The bridging of the Mersey at that place was a more important achievement for Lancashire generally than Sir Edward Watkin's enterprise, though the latter, after his manner, has taken care to advertise his scheme.

PROFESSOR ADLER, we hear, intends to resign his appointment under the Prussian Office of Works, on account of failing health. Besides attending to the publication of the further volumes of "Olympia," he will devote some time to the completion of his great "History of Architecture," which will fill a gap in German architectural literature.

IN a "Note," on June 14, 1890, we adverted to the removal into No. 9, St. James's-square, of the Portland Club, which was established at No. 1, Stratford-place, Oxford-street, after the dissolution, in January, 1825, of the Stratford Club, formed, we believe, in or about 1780. The club-house in Stratford-place has lately been pulled down for the building of new premises for a branch of the London and Westminster Bank, as planned and designed by Mr. F. W. Hunt, of York-place, architect. Stratford-place stands upon part of the Conduit Mead estate as leased by the Corporation of London, and, according to a drawing in the Crace collection, Robert Adam built the house along its northern side for Lord Aldborough in [or, rather, about] 1774. A drawn ground-plan, dated 1779, in that collection, marks the house at the south-west corner as being Lord Aldborough's. Conduit Field, of twenty acres, to the west, passed to J. T. Hope, on his marriage with Helen, daughter and heir of Sir Thomas Edwardes, Bart., and thereon were built Somerset, Edwardes, and Duke streets, with Geescourt, Barrett-street, Barrett-court (now St. Christopher's-place), &c. Conduit Mead extended from Stratford-mews, next southwards of Wigmore-street, to the Clarendon and Burlington properties. It includes Hay-hill, Grafton-street, the two sides of Bond-street, with portions of Albemarle and Conduit streets. General Strode, who set up in Cavendish-square an equestrian statue to the Duke of Cumberland, put up in front of Aldborough House (1799) a Corinthian column, 20 ft. high, to carry a statue of George III., and inscribed it in commemoration of our victories in India and at sea; the foundation giving way, the pillar was removed six years later. It stood very near to the site of the "Lord Mayor's Banquetting House," that had remained until 1737, whither the Corporation used to repair annually, on September 18, after their visit to the several conduits in this quarter, whence water had been taken to the City from a very early period. In his book upon Marylebone parish, 1833, T. Smith says:—

"The water-pipes .... were not always embedded in the earth as is the present custom, but enclosed within a capacious arch of brickwork, on a table of stone, into which workmen could descend to repair any decay or accident. An arch of this description was discovered some years ago in Bond-street, leading from the conduits at Tyburn .... and has since been converted into a sewer."

We are credibly informed that an arch of the fashion he describes has been found beneath the pavement in Oxford-street, by the corner of North Audley-street; at a spot where a conduit-head formerly stood.

THE exhibition at the gallery of Messrs. Tooth & Sons in the Haymarket, includes two or three notable works, among others a grand painting by Rosa Bonheur of a lion, lioness, and cubs, life size, under the title "The Lion at Home." The group is very finely composed, and though there is nothing of the sentiment which some painters have endeavoured to infuse into animal paintings, the picture is impressive from the mere grandeur of its realism and from the power of drawing displayed in it. Another work on view is Mr. Tadema's large and fine painting of "The Sculpture Gallery," which has not been seen in public for some years. Sir J. Millais' "Lingering Autumn" (the Academy picture of this year) flanks Rosa Bonheur's lions on one side, a good landscape by Mr. Farquharson, "Seaton Marsh," forming a pendant to it. A picture of "A Breton peasant," by M. Dagnan-Bouveret, painted in a somewhat decorative manner, is remarkable for originality both of character and colour.

WE have received a letter from a provincial architect in reference to our "Note" (page 297, *ante*) about the issue of illustrative broad-sheets of their works by provincial architects, complaining that we should have implied that "provincial architects" were especially guilty in this kind of thing. We can only say that we have two or three times received these advertising sheets from architects well-known and having a large practice in provincial towns, and we never saw such a thing from a London architect of anything like the same professional standing. What some London architects can do, however, our correspondent shows by a letter he sends us, of which the following is a skeleton copy:—

"DEAR SIR,—We understand there is to be a competition, confined to architects in ——, for a [description of building] to be erected by the Corporation. We should like to know if you intend competing and if you care to avail yourself of our services on terms to be arranged.

We are architects for the similar building erected by the —— Corporation, which has been taken for a model in several other towns, and we have probably more experience of this class of work than any other firm. Should you consider this favourably, kindly let us know at once.—Yours faithfully,

—— & ——."

Our correspondent wishes to know whether this is "recognised London practice." He may be assured that it is not, and that no London architect of the best standing would dream of sending out a touting letter of that kind. Our correspondent declares that on a local competition being advertised they are deluged with offers of a similar nature; but that we take to be a little exaggeration. At any rate the document sent to us is the first of the kind that we have seen. It is, however, very discreditable that such letters should be written by members of a profession ("or art") which ought to have as high a code of self-respect as the legal profession, for instance; especially when we find that the writers are sheltered under the wing of the representative professional body; for the issuers of the illustrated sheet previously referred to (who describe themselves on their letter-paper as "architects, surveyors, valuers, and estate agents") are both Fellows of the Institute, and the authors of the letter of which we have given the substance above are both Associates of the Institute. Surely the Institute, as the representative professional body, should endeavour to prevent its accredited members from doing what in any other liberal profession would be considered distinctly "unprofessional."

THE ENGLISH IRON TRADE.—There is still little alteration of note in the English iron market. The crude iron branch is inactive. Prices generally are fairly steady, but Cleveland pig is 1s. lower on the week, and one or two Scotch brands are depressed. In manufactured iron there is only a hand-to-mouth business reported. In tin-plates, although there have been further stoppages of mills, the demand is a trifle better. In most departments of steel little activity is observable. Shipbuilding yards are only just kept going, and engineers and iron-founders, on the whole, lack employment. The coal trade is moderately brisk.—*Iron*.

AN ARTISTIC PIANO.

FOR the last few days Messrs. Broadwood & Sons have been exhibiting a pianoforte of unusual exterior beauty and elaboration, made from the designs and specification of Mr. T. G. Jackson. It is almost needless to say that its design has nothing in common with the meaningless curves and decanter-stopper legs of the ordinary type of piano-case. The main lines are square in character, following the construction, the legs are designed as colonnettes in couples, with a baluster between them, resting on a solid base-plate in which are fixed the castors. There is an expression of strength combined with gracefulness in these supports, which give the whole construction the appearance of being solidly and architecturally built. The outside of the case is veneered with purple wood, stained a dark green, the combination of the natural wood and the stain producing a peculiar rather dead black, quite different from the ordinary black of ebony, and much less *prononcé* in effect.

The sides of the case and the outside of the lid are inlaid with scroll ornament in elaborate and beautifully-executed intarsia work, mostly in satin and pear-tree wood. On the side are inserted at intervals escutcheons with a short quotation of music. These escutcheons, we were rather surprised to see, are slightly shaded to give a certain effect of relief, which we do not like and which seems out of keeping with the purely decorative and conventional character of the design in general. The inner side of the lid, which shows when it is propped up, is very richly treated with a beautifully-designed scroll-work, rather more realistic than that of the exterior, but quite sufficiently conventionalised; this is executed in gesso on a ground of lacquered vermilion. The whole instrument is a beautiful piece of work, very rich in effect, but a due restraint is preserved in all the ornament. The treatment of the music-desk, with its simple straight bars and centre inscription panel, is a refreshing contrast to the usual "lyre" shapes and curvilinear twistings of fret-work; but the method of designing the supports is the greatest merit of all, and ought to be an example for the future building of pianos; for pianoforte-makers will discover, (if they can only bring themselves to break through precedent) that properly-designed supports like these can be carried out, as far as general form and design are concerned, in a simple and inexpensive case just as well as in one with costly decoration, and that there is no need they should cost any more than the regulation decanter-stopper legs. We remember pointing this out to some of Messrs. Broadwood's people two or three years ago, when looking at another specially-designed piano, and asking them why they did not try a better design for the legs than the usual ugly one; and the reply was that if they began to do that they would have to remodel the whole case in accordance with the new leg, and they could not afford to do it at the ordinary price of a piano. Now, however, the same firm seems to have discovered that it is possible, after all, to make ordinary pianos on the principles of correct and sensible design, as we were shown two or three comparatively plain ones built on the same principle as in Mr. Jackson's design, which, as it has been two years in process of making, has probably given the hint for this improvement.

There is one portion of the supports of the piano, however, which we do not quite like viz: the twisted and irregular outline of the oblique struts which assist in strengthening the main joist of the piano. As these are part of the construction, introduced for the purpose of strength, we cannot see why they alone should exhibit a florid and curvilinear outline which seems sternly banished from the rest of the design. There is also one other detail we should take exception to not on artistic but on practical grounds, and that is the decoration of the "black" keys by inlaying the top of them with ivory, forming a black and white rib-work. The effect is decoratively good, and it is no doubt a revival of an ancient practice, but it is at variance with the real object of the keyboard, in which the plain black and white keys are far the clearest and pleasantest to see and handle. In fact the system of decorating the keys belonged to a time when playing was of a very simple kind, and has been naturally dropped with the progress of pianoforte-playing, when the fitness of the instrument for its purpose came to be the primary object; and that object should never be overlooked in designing and

decorating a musical instrument. The keyboard is the *raison d'être* of the piano, and whatever decoration may be lavished on the case, the sole end in designing the keyboard is that it should be the best possible colour, shape, and material for playing on, and what is that "best" has been settled by the general consent of the pianoforte-playing world for many years back. The same principle applies to the design or decoration of all musical instruments, and is illustrated in the history of the violin as much as in that of the piano. In the very early days of violin-playing, and before the instrument was fully developed, elaborate carved and inlay ornament was frequently lavished on it. But, as soon as violin-playing began to be an art studied and followed seriously by musicians, these ornaments disappeared, and nothing was introduced that could in any way distract the eye or the attention of the player from the real business in hand. This is what occurs in every case where the handling of an instrument becomes an object of refined manual skill, only acquired by special training. All ornament which in any way interferes with the practical use of an instrument becomes an impertinence, and is at once scouted by a competent player. Let any one try the experiment of presenting an eminent violinist with an elaborately decorated violin, and see if the gift will be appreciated. So emphatically is this principle true that we should expect to find that the lady and gentleman for whom Mr. Jackson has designed, and Messrs. Broadwood have made this finely-decorated instrument, if they have acquiesced in this treatment of the keyboard, are not after all persons of very strong musical sympathies, and that they regard their beautiful pianoforte rather as an *objet de luxe* than as a musical instrument.

THE ARCHITECTURAL ASSOCIATION.

The opening meeting of this Association for Session 1892-93 (which was also the annual general meeting) was held on Friday evening, October 21, in the meeting-room of the Royal Institute of British Architects.

Annual Report, &c.

Mr. H. O. Cresswell, the President, occupied the chair, and the first business after the confirmation of the minutes of the last meeting of last Session was the consideration of the annual report and balance-sheet, the adoption of which was moved by Mr. F. T. Baggallay and seconded by Mr. Hampden W. Pratt. The annual report of the Committee expressed satisfaction that the results of the new scheme of education introduced last Session had been, on the whole, encouraging. The First and Second Years' courses had been very well supported, but the Third Year's course had been very thinly attended; while, owing to the lack of students, part of the Fourth Year course was not started. The success, financial and otherwise, of the first Two Years' courses was encouraging, and it might be expected that the students who had attended those courses would now pass on to the more advanced courses, thus leading to their success also. The comparative failure of the Third and Fourth Years to attract sufficient students need cause no uneasiness: there were sufficient causes to account for it. The success of the Association had not been retarded by the doubling of the subscription and entrance-fees, as ninety-eight new members had been elected during the Session. The new scheme was not expected to be self-supporting in its early stages, and to provide adequate funds it had been necessary to issue appeals, to which there had been a liberal response.

The balance-sheet showed an expenditure for general purposes of 1,632*l.*, a sum 128*l.* in excess of receipts. These included 639*l.* for members' subscriptions, 180*l.* for entrance-fees, and 645*l.* for students' fees. The Premises and General Fund Account showed donations amounting to 991*l.*, of which 300*l.* had been spent on alterations to premises and in the purchase of furniture and fittings. After meeting the deficit of 128*l.* already mentioned, and cost of printing, &c., a balance of 480*l.* is carried forward.

The report and balance-sheet were adopted, coupled with a vote of thanks to the auditors, Messrs. E. C. Pinks and B. Dicksee.

Mr. E. S. Gale announced donations towards the General Fund of 13*l.* from Professor Kerr and 10*l.* from Mr. E. P. Warren; also a donation of some furniture and casts from Mr. Wyatt Papworth. A vote of thanks to the donors was carried by acclamation.

On the motion of the President, a vote of thanks was accorded to the Entertainments Sub-Committee and to Sir Somers Vine for their services in connexion with the recent *conversazione* of the Association at the Imperial Institute.

Forty-six gentlemen were nominated for election, and three (Messrs. H. R. Macaulay, R. Oldham, and L. Banks Price), having been previously nominated, were elected.*

Prize-List, Session 1891-92.

The President said that before he announced the awards of prizes for the past session, he had to make an apology on behalf of the Committee. They had hoped that the Association Medal which was to be given this year, and which was being modelled for them by Mr. Gilbert, would have been on view that evening. Unfortunately, pressure of other work had prevented Mr. Gilbert from completing it in time. Mr. Gilbert, he believed, was at present engaged on a memorial of the Duke of Clarence, and he had received a Royal request (which was equivalent to a command) that the work should be finished by a certain date. He (the President) was told that the medal would be a charming work, as, of course, they would all expect; and Mr. Gilbert had very generously undertaken to model the medal for the Association free of all charge. Under the circumstances the Committee had thought that those who were to be recipients of the Association Medal would prefer to wait for the new Medal than to receive the old one.

The list of prizes awarded during the past Session was then read. It was as follows:—

The A.A. Travelling Studentship, with Bronze Medal: Awarded to Mr. T. A. Sladdin. A second prize of 5*l.* awarded to Mr. E. A. Rickards.

The Association Medal, with a prize of 10*l.* 10s.: Awarded to Mr. A. H. Clark. A second prize of 5*l.* 5s. (special) was taken by Mr. A. H. Moore; and Hon. Mention was accorded to Mr. W. A. Forsyth.

The Discussion Section Prizes: First, not awarded; special second prize (1*l.* 1s.), awarded to Mr. J. C. Stockdale.

The Arthur Cates Scholarship: Awarded to Mr. W. C. Waymouth.

Measured Drawings Prize: Awarded to Mr. A. J. Roddis.

The Andrew Oliver Prizes: First prize not awarded; second prize (2*l.* 2s) awarded to Mr. A. Stratton.

Lecture Side: *First Year*: Silver Medal to Mr. F. S. Hammond: Bronze Medal to Mr. G. E. Boys; Hon. Mention of Mr. E. Tylee. *Second Year*: Silver Medal to Mr. C. C. Brewer; Bronze Medal to Mr. J. R. Stark; Hon. Mention of Mr. R. H. Hunter. *Third Year*: Silver Medal to Mr. N R. Smith; Bronze Medal to Mr. A. J. Johnson; Hon. Mention of Mr. W. K. Shirley.

Studio Side: *First Year*; Silver Medal to Mr. R. F. Summers; Bronze Medal to Mr. E. O. Cummins; Hon. Mention of Mr. E. G. Simpson. *Second Year*: Silver Medal to Mr. J. P. Clark; Bronze Medals to Messrs. A. Stratton and F. Taylor, and bracketted equal; and Hon. Mention of Mr. C. C. Brewer. *Third Year*: Silver Medal to Mr. C. C. Winmill; Bronze Medal to Mr. W. C. Waymouth; Hon. Mention of Mr. A. T. Walmisley.

The late Mr. James Fowler.

The President referred in feeling terms to the death of Mr. James Fowler, of Louth, whose loss, he said, would be deplored by everybody who knew him. He moved that a letter of condolence be sent to the widow and family. This was seconded by Mr. Cole Adams and agreed to.

Gift of a New Prize.

Mr. E. S. Gale announced that Mr. James Brooks had offered a prize, value 10*l.* 10s., open to all members of the Association, for the best set of measured drawings of one bay of the choir of Christ Church Cathedral, Oxford. A cordial vote of thanks was accorded to the donor.

The President's Address.

The President then proceeded to deliver the opening address of the Session. He devoted the first portion of it to a review of the results of the first year's working of the new educational scheme of the Association. Taking the Classes and Lectures first, he said that the total number of full students who joined the First Year's course was thirty,—"full students" being those who paid the inclusive fee entitling them to take up all the subjects in that year. In addition to these there were a certain number who did not take the whole, but joined only certain classes and lectures, and these were described as "occasional students." The number of these varied in the different subjects, but the largest number in any one class was twenty, and this was in the Lectures on Materials and Construction. In the "Second Year" there were eight "full students" taking the whole course, and of "occasional students" the largest number attending any one class was ten,—in the Class for the Study of Ornament and Colour Decoration, "English Architecture" coming next with nine. In the "Third Year" there were nine "full students," and the largest number of "occasional students was eight, in the Class for Specification-Writing and Quantity-taking." It was intended to start a "Fourth Year" course if sufficient students sent in their names, but as the number of these was not large enough, in the opinion of the Committee to justify them in doing so, that course was not held last Session on the Lecture Side. There was no ground for discouragement, however, because so long as there was a steady supply of students coming in at the bottom, there would be sure to be plenty to fill the classes at the top in future years. On the Studio Side, the proportion of students in the junior years, as compared with the senior, was very similar to that in the Lectures and Classes. Financially, the result of the first year's working was more satisfactory than was at one time anticipated. They had always expected that for the first year or two, and until the scheme was properly founded, the number of students would be insufficient to enable all expenses to be met out of the fees received. That had proved to be the case, for although on the First and Second years a profit had been realised, it was all swallowed up by the loss on the Third and Fourth years, leaving a loss of about 200*l.* Towards the outlay necessitated by obtaining new premises and furniture, they had appealed for funds, and their appeal had been generously responded to by many of their own members and others interested in the work of the Association, the amount received in donations to the General Fund up to the present time being about 1,000*l.* Having referred to some alterations in detail which have been effected in the working of the educational scheme as the result of last year's experience, the President touched upon other phases of the work of the Association, and then proceeded as follows:—

Turning now from the work of the students to matters of more general interest, I must say a few words on the subject of the differences which marked the close of last Session, and which at one time threatened to cause a serious split in our ranks. Although in the heat of the controversy much was said and much was written on both sides, which in calmer moments one would properly regret, yet I am happy to think that wiser counsels have prevailed, and the good sense and moderation of both parties has shown them that by the exercise of a little tact and consideration for the opinions of others, each can learn something from the other, and that more good can be achieved by their united action than by a blind and unreasoning hostility. I trust that all feeling of enmity has passed away, and that we shall have the cordial co-operation of all members for the welfare of the Association in the future, as we have had in the past. At no time of its existence has this Association more needed the strength which is the result of united action, standing as we do on the threshold of a new departure in our history; and should there be any who still hold aloof or nourish any feelings of resentment in consequence of what has occurred, I would earnestly beg them to put all such feelings aside, and sink their private wrongs for the sake of the Commonweal, for we require the support of all. I should not have referred to our little differences at all on this occasion had it not been that among the questions which were raised in the course of the dispute were some which were of vital importance to this Association, and not only to this Association, but I venture to think affecting interests of a wider range even than that. In consequence of our having endeavoured to do something to systematise the course of study for architectural students, we have been accused of degenerating into a mere cramming-ground for the Institute examinations.

Cramming, as I understand it, is the operation of forcing information into a man at high pressure so as to enable him to acquire just

* When the 46 nominations become elections, as will no doubt be the case at the next meeting of the Association, this will bring the total of the Association's roll of members to 1,174, so that before the end of the Session it will probably exceed 1,200.—Ed.

sufficient to pass an examination in a given time, and is, as a rule, only necessary for those who have not availed themselves of the ordinary means of instruction. It has been very aptly compared to the system adopted in Strasburg for producing *pâté de foie gras*, and which consists in keeping an unfortunate goose fastened up in a coop and stuffing food into it until it produces disease of the liver. I hardly think that the term "cramming" can be properly applied to a course of instruction which is spread over a period of at least four years, and which may be spread over a longer period still at the option of the student. Anyone who will take the trouble to read the advice to students printed in last year's Brown Book will also find it stated that the course is expressly designed for the purpose of preventing the necessity for cramming, and the student is advised not to attempt to go through the whole course in four years, unless he is able to devote a certain amount of time in each week during the day for the purpose of reading the books referred to in the various lectures and for private study. I think, therefore, that the term "cramming" is altogether misapplied in speaking of the A.A. course of instruction.

Then as regards the question of preparation for the Institute Examination. The primary object we had in view in laying down the new curriculum, and the object which the Association has always had in view, was to afford an opportunity for acquiring instruction in those subjects which, coupled with the experience to be gained in an office, would fit a man for his work as an architect; but, at the same time, we felt bound to take notice of the examination tests imposed by such bodies as the R.I.B.A., the R.A., and other kindred societies for the admission of students to membership or to their schools, and I think had we not done so we should have failed in our duty to our students and to ourselves. Whether the Institute should or should not impose an examination upon all those who desire to be admitted within its ranks is a question into which I do not propose to enter here,—further than to say that it appears to me that every society has a perfect right to dictate the terms upon which it will admit members. The point that we as a teaching body have to consider is the fact that the Examination exists, and that many of our students come to us for the express purpose of acquiring the information in our classes or studio necessary to pass it. We neither seek to induce them to go into it against their will, nor do we try to dissuade them from it if they have made up their minds to do so; the student has perfect freedom of action, and if he desires to go in for the Examination we believe that he can obtain all the information necessary in our classes. If, on the other hand, he does not wish to do so he can take up as much of the course as he thinks necessary or suitable to the particular bent of his genius. The Association is essentially democratic in its institutions, and leaves perfect freedom of action to each individual, so long as he does not interfere with a like liberty to his neighbour.

Again, it has been said that by accepting a contribution from the Institute towards our funds we have sacrificed our independence, and handed ourselves over to that body bound hand and foot. If I had thought for one moment that accepting a grant implied any such thing, I for one should most certainly have voted against it; but I do not believe it, nor do I think that anyone else who knows anything either of this Association or of the Institute would believe it. There is, so far as I know, no feeling of hostility between us; on the contrary, we are the best of friends, and I hope may remain so; but we, as an Association, are jealous of our independence, and he would be a bold man who would propose any measure calculated to infringe it. Self-help is one of our guiding principles, and self-government is inseparably connected with it; and though this Association has been in existence for nearly fifty years, during which time it has assisted in educating hundreds of young architects, I think it has reason to be proud of the fact that until last year it had never appealed to those outside its own ranks for pecuniary assistance, and it only did so then because it was endeavouring to found a scheme of education on a much wider and more comprehensive basis than had ever been attempted before, and which required a larger outlay of capital than it had at its disposal. But, gentlemen, though the Institute, as the chief architectural body of the kingdom, responded generously to that appeal, it is not to members of the Institute alone that we are beholden for contributions to our funds. Among the list of subscribers are to be found such names as that of Mr. Norman Shaw, Mr. T. G. Jackson, Sir Arthur Blomfield, and others, gentlemen who are strongly opposed to the policy of the Institute, and who, for want of a better title, have been called the "Memorialists." We are equally beholden to these gentlemen for their assistance, but I would ask whether it is urged that by accepting their contributions we have sacrificed our independence and handed ourselves over bound hand and foot to them also? If so it would appear that we have handed ourselves over to both parties, which is absurd. The fact of the matter is that the traditional policy of this Association has always been not to mix itself up in architectural politics at all, but to hold aloof entirely from all such matters, devoting itself to the education of its students and the promotion of good fellowship amongst its members, and hence it is that in the past we have had the cordial co-operation of all those interested in the progress of architecture, no matter whether they be members of the Institute, of the Royal Academy, the Society of Architects, or of any other body. Gentlemen, I trust that by a continuance of this policy we shall have an equally wide support in the future. There has been in the past one platform upon which all these men could meet, and that was the platform of education. It seems to have been tacitly admitted that, however divergent their views might be upon the burning questions of the day, they were all prepared to admit that some education was necessary for young men who wish to become architects, and that it is seldom, if ever, that all that *is* necessary can be obtained in the routine of an office. They may differ in the future, as they have in the past, as to the relative importance of various subjects and the precise means to be adopted of teaching them, but on this question the Committee are, and always have been, open to receive suggestions from whatever quarter they may come, and to give them due consideration with the object of embodying them in the course if it is thought desirable, so far as is practicable in the limited time at the disposal of the students. I appeal to all those, therefore, who are interested in the progress of architecture, to sink their differences, and to give us the advantage of their advice and co-operation in carrying on the work of this Association, irrespective of their belonging to any particular society or not. This is the basis of support upon which we have rested in the past, and upon which I trust that we may also rely in the future.

I think that we are all agreed that the education of architectural students in the past has been of a most haphazard and imperfect description. Here and there brilliant genuises have stood forth in spite of the system, shining like beacon-lights in the general gloom, and only serving by their brilliance to make the surrounding darkness seem the blacker; but courses of instruction are not arranged to suit the genuis. He is a *rara avis*, usually most erratic in his habits, and may be left to soar aloft on the bright wings of his imagination, untramelled by the conventionalities of everyday requirements. We can leave him with confidence to pursue his own bright aërial flight. What we do want, however, is to effect a general raising of the standard of excellence among the earnest and thoughtful men who will in after-life have to carry on much of the world's work, and it is to help us in this object that we have appealed for assistance to all those who are interested in the progress of architecture.

We do not profess to be able to create artists; that is an achievement which it is not in the power of this or of any other Association to effect, for the artist, like the poet, is born, not made; but what we do profess to be able to do is to educate that artist when he has been created; to assist in developing the artistic instinct which may be within him, and to give him an opportunity of acquiring instruction, *pari passu* with his artistic development in those methods of practical construction and sanitation, without which his artistic attainments are of very little value. Surely this is a basis upon which all architects may unite to assist us.

That some such instruction is urgently required may be seen by any one who will take the trouble to walk through the streets of this or any other large town and examine the buildings which have been erected in the past fifty years or so. I grant that there are a few brilliant exceptions, but these form but a small percentage in the vast aggregate of dull, monotonous, common-place buildings, plastered over with meaningless ornament and covered with unnecessary features, which force themselves upon us on every side. I believe that at the present time there are signs of an awakening, and a promise of better things to come; and it is for you to say if this promise is to be fulfilled. We have heard much of late years about styles, and the possibility of a new one being created, which is to become the style of the future; but what we want is "style," not "styles"; and it is not until we cease masquerading in the fancy dress of every other country and period but our own that any real progress will be made towards the attainment of this object.

What do we mean by "style?" "Style" in architecture I take to be the language by which we express our thoughts, and it should be the natural expression of the requirements of a building, controlled by the exigencies of climate and the proper use of the materials at our command. Viollet-le-Duc, in one of his lectures, instances a modern locomotive engine as one of the best examples of "style," because its outward appearance is the simple outcome of the requirements of the interior without any attempt at concealment or unnecessary adornment, and is perfectly fitted for its work. When we can be satisfied with giving the same natural expression to the requirements and construction of our buildings, only using ornament where we feel it is required for a definite purpose, and thinking less of past styles and more of modern requirements, then, and not till then, shall we once more have a style of our own. The study of the styles of the past is a most interesting one, but it is archæology, not architecture, and it is only valuable to us as architects if we can make use of it properly; to learn broad principles from the study of it, to see how our predecessors obtained the results we admire, and, in fact, to learn to do *as* they did and not to copy *what* they did. As long as we continue to reproduce the styles of the past in our work of to-day, and to palm them off upon a confiding public as our own creations, so long shall we delay the possibility of architecture once more becoming a living art amongst us. Let us study and reverence the work of the past, for there is much to be learned from it, but the highest and the best lesson of all is not to copy it.

Gentlemen, I have now endeavoured to give you, very imperfectly I fear, some account of our work in the past and our hopes for the future, and to direct your attention to some of the points which are of importance to us as architects and members of this Association. I feel conscious that there are many things left unsaid, for which I must crave your indulgence; but it is not easy to compress all that one might wish to say on the subject into the limits of an address such as this, and I fear I have already trespassed on your kindness too long. I am consoled, however, by the reflection that it is not by words but by deeds that the architect must stand or fall, that it is by what we do and not by what we say that we shall be judged hereafter. I would, therefore, in conclusion, urge you to think no trouble too great to achieve a satisfactory result in your work, and never to rest until you have made whatever is confided to your charge as perfect as possible for its purpose, and as beautiful as you can, no matter how small or simple the work may be. Everything is capable of being invested with some amount of individuality and interest if we will only take the trouble to think for ourselves, and not blindly follow the stereotyped forms laid down for us by others; and it is often the smallest things which require the most care and thought, and in which true artistic feeling is best displayed.

Do not for one moment suppose that on this account, or from anything I have said above, I would seek to curb or restrain the aspiring genius who dreams of doing great things; on the contrary, I would say, set your ideal as high as you possibly can, for it is given to few men to attain to the summit of their ambition, and the higher your aim the greater chance of your doing something; but I do wish to emphasize the fact that it is not in cathedrals or other buildings of great size and importance alone that scope is afforded for originality and

artistic feeling, but that everything which comes to your hand, no matter how small or insignificant, is capable of being made beautiful and suitable for its purpose, and such that it may give pleasure to those who have to use it. If you do this, you will have realised in the highest sense the meaning of our motto: "Design with beauty, build in truth."

Mr. Aston Webb said he wished to be allowed to propose a vote of thanks to the President for his address. It afforded him great pleasure to do so, for Mr. Cresswell was his first pupil, and he naturally felt some pride in seeing him occupy the Chair of the Association. He thought Mr. Cresswell's address had steered exactly the right course between two extremes. He had explained in some detail the working of the Association's new educational scheme, and he had touched lightly upon other subjects underlying which there was at present some smouldering fire; but he had touched them so lightly that there was no fear of controversial questions coming up on that occasion. During his (the speaker's) presidency, a good many years ago, the Association was a quiet, rather easy-going body,—a society entirely for mutual instruction. They used to have classes in which they criticised pretty freely each others' work, and incidentally made many friendships which they highly valued. Now things were quite changed: the Association had a journal; it had contested elections, and it had electioneering pamphlets. All that was evidence that the Association was alive, and no doubt it would be all the better, and none the worse, for the discussions which cropped up during the last session. In speaking of the scheme of education which had been started, one could not help thinking how much the scheme had been indebted to the energetic originator of it, Mr. Leonard Stokes, and it must be a great pleasure to him to see that the members were beginning to appreciate it and to use it more freely. With regard to the "third and fourth years" of the course, one would naturally expect that at first they would not be so fully attended as the others. In looking around the room that evening at the large number of drawings exhibited, one must feel that an immense deal had been done during the past year, though the drawings exhibited did not represent anything like the whole of the work that had been done, consisting as they mostly did of prize drawings only. He had been very pleased with the tone of the President's address; it contained no hard words against the Institute, nor anybody else. He had touched on the question of the Examinations lightly, and, of course, those examinations were very much in every one's mind at present. The President had said that it was not the duty of the Association to decide whether the Institute should have examinations or not; but just suppose if the Institute admitted members without any examination of their qualifications at all, what would be said then? He could imagine what an opportunity for the critics this would be. The Institute now, before admitting a member, was careful to ascertain if he was worthy of being admitted to its ranks. The Fellowship or the diploma should not be looked upon as a mere personal distinction. Architects should not join societies for such reasons, but for the sake of the good that societies were capable of rendering to architecture and the profession to which they belonged. Such societies were for the general good, not for the individual; a far higher diploma was open to all architects than from any society at all. One must go into the streets for that, for the diploma was obtained in bricks and mortar, Portland stone, and materials of that sort; and it was in the streets of our great towns and the churches all over the country that this could be won. It was for his executed buildings that an architect received from his *confrères* a far higher diploma than any society could possibly give him. The President had mentioned the great importance of visiting new buildings in progress, and had referred to the opportunities which the Association offered to its members for doing so. The President had been rather severe upon modern buildings, no doubt correctly; but he (the speaker) was not quite sure whether that was the best way to regard them. It was extremely easy when one saw a modern building to say: "Well, I don't think much of that;" but he had noticed very often that those who did the best work, when they saw a modern building by another architect were more desirous to find out what he had been aiming it, and how far he had succeeded in his aim than to detect its faults. The merest tyro in the Association when he was going over a new building, could easily see its defects; but while it was sometimes far more difficult to find out the good points of a new building, it was certainly far more pleasurable, and he would recommend the members of the Association on seeing a new building to try and ascertain the object of the designer, and to see how far he had attained his object, before criticising the work. Of course, it was impossible not to see defects in most buildings, but they should learn to seek and dwell upon their good points rather than their defects. In conclusion, he expressed his personal gratification in seeing Mr. Cresswell in the Presidential chair, the highest honour which the Association could confer upon any of its members, and he begged to move a very hearty vote of thanks to him for the admirable address which he had delivered.

Mr. Cole A. Adams said he had much pleasure in seconding the vote of thanks which had been so eloquently proposed by Mr. Aston Webb, to whom it must be a great satisfaction to see his former pupil occupying the distinguished position of President of the Association. The President, as had been said by Mr. Aston Webb, had touched lightly upon various matters which in the past had been burning questions in the Association, and he (the speaker) desired to express his thorough appreciation of the conciliatory line which the President had taken. He trusted that they would now all throw their energies into working for the well-being of the Association. When reviewing the work of the past session, it was impossible not to have in mind the services of those who had been the chief movers in the promulgation of the new educational scheme of the Association. Foremost amongst them was Mr. Leonard Stokes, and he (the speaker) had great pleasure in testifying to the great tact, energy, and skill which he had shown in relation to that matter, proving in this, as well as by his works as an architect, that he was a man distinguished by ability and talent. The President had alluded to the importance of the study of works in progress; he thoroughly endorsed that opinion, and trusted that it would soon become more common than it was at present for principals to allow their pupils to visit works in progress frequently, for a little experience gained upon an actual building was worth more than a great deal of experience in drawing and tracing in the office. In connexion with that matter, he might call attention to a very practical suggestion made by Professor Roger Smith in one of his lectures. That suggestion was to the effect that a walk through the streets of London was full of teaching in building matters. Probably everyone who had half an hour's walk daily between home and office would be able to watch day-by-day the progress of some new building or other, and in many instances he would no doubt readily gain permission from the architect to visit the building occasionally, and would be able to get valuable information from the foreman or clerk of works. He heartily concurred with the President as to the importance of measuring old buildings. The President had very rightly and very properly alluded to the question of the charge which had been brought against the Association that it was a "cramming" institution, and he trusted that once and for ever a nail had been driven into that coffin. It was a most unjust charge to make, for the Association had its lectures and classes, and the man who made the best use of them would have no need whatever to "cram," if he took them in their proper course. He knew it might be said that wherever examinations were instituted there would be a tendency to "cram," but the knowledge gained by "cramming" was merely superficial, and was not to be compared with that which was to be gained by a systematic course of instruction such as was afforded by the classes of the Association. He thanked the President very warmly for his address, and heartily seconded the vote of thanks to him.

Professor Kerr said he had much pleasure in supporting the vote of thanks to the President, and he did so with all sincerity and fervour. It was one of the greatest pleasures of his life to come down occasionally to the meetings of the Association, and especially to the opening meetings of the session. He had attended a good many of those meetings, and had seen the chair occupied by a succession of young men who had become distinguished in the profession. The Association was the most successful society that he knew of,—absolutely the most successful. Let them consider for a moment. Nearly fifty years ago the Association was founded by a very few very young men for the purpose of engaging in fortnightly discussions after the manner of their seniors in the Institute, with the object in view of improving themselves educationally, in recognition of the fact that ordinary office training was not equal to that end. Let them consider what had been done by the Association since that time; let them look at its position at the present time. Not only did they have disputed elections, which were of importance to the profession at large; not only did they have warm discussions upon points of controversy,—and such discussions were the life-blood of a society; not only had they held Classes with a directly educational purpose for so many years; not only did they maintain the A.A. "Sketch-book," which was one of the most meritorious productions of the profession; not only did they carry on their journal, *A. A. Notes*, which seemed to be equally well conducted, whether by one party or another; not only did they do all these things, but they had now established what was practically an Architectural University, and they were able to dismiss with a mere wave of the hand, as a thing never to be mentioned again, the supposition that the Association was a mere cramming institution. In no sense whatever was cramming involved in the educational programme of the Association. Those who used the word "cramming" as a term of reproach applied to the Classes of the Association must forget what cramming meant. It did not mean anything approaching what was done in those Classes; what was done there was entirely the reverse of cramming; it was education by means of systematic courses of instruction, and not cramming to pass an examination by mere artifice. Having had something to do with the educational scheme of the Association last year, he was bound to say that he had now a much higher opinion of it than he had at the commencement of the year. He thought then that it might perhaps be partially successful; he now thought that it would be perfectly successful. The Classes were well arranged, and the work that had been done in them, although not conspicuous, was no doubt on that account all the more solid and substantial. The young architect taking up at the present time the programme of the educational scheme of the Association, had it in his power to acquire all that could be learnt in classes or studio. He did not know any other course of study which could be pursued by him, in London or out of London, with more benefit. He was glad to see that the two Colleges of London were making great efforts in the direction of architectural education; but there was one point in which the Association had a great advantage over them, and, without disparaging in any degree whatever the means of education at the great colleges, the great advantage which the Association possessed was that it had a number of lecturers, all of whom were architects, and who collectively would be able to teach the whole philosophy of architecture. He was very pleased to hear that, financially, the scheme had not been ruinous to the Association, as he was almost afraid that it might be, and there seemed to be reason for hoping that it would be successful even in this respect. He had heard it suggested that the management of the scheme ought to be in the hands of older men; but he did not think so, for the older men were too busily occupied to give time and attention to the undertaking; on the contrary, the men whom they had on the Committee of the Association were precisely at the proper age for carrying it out successfully. He thought that if it were proposed (as it would *not* be) that the Institute should join in the management of the Association's Classes, it would not be for their advantage, and he believed that those who had the keeping of the affairs of the Institute would be of the same opinion. He therefore thought they might proceed with all energy, and with every hope of success. He said this sincerely and earnestly, for what it was worth; and having been connected with educational matters for so many years he might be considered entitled to give them a word of God-speed. As regarded the great question which seemed to have stirred up

a little storm amongst them (he supposed it was the question whether architecture was an art or a profession, for he did not know of any other question that was agitating the architectural mind at the present moment), he was very happy to hear from the President's address, and from the applause with which it was greeted, that the Association was in favour of peace and mutual forbearance. They could not all be great artists. He (the speaker) was not a great artist himself; he never pretended to be one, but he professed to be an architect, and had been an architect all his life. He was made an architect by accident, as they all were; even some of the most distinguished men in the profession had entered it by accident. If any of them thought themselves to be more of artists than of architects, he would advise them not to be too proud of their artistic aspirations. An artist would be always soaring up into the empyrean; he could not help it. Let him do so to his heart's content; it would do him good, and when he descended to the level of the earth he would be none the worse for having given vent to his superfluous energy. He hoped that there would be no acrimonious discussions upon such questions within the ranks of the Association. Anything like a split in the Association on such a point would be simply ridiculous. If there must be a split on such a question, let it occur in another place, where men were able to look after themselves and to take care of each other. The Association could afford to do no such thing. He had very great pleasure in cordially supporting the vote of thanks to the President.

Mr. Thomas Blashill, Superintending Architect to the London County Council, said it was exactly thirty years since he had the great honour and privilege of occupying the Presidential chair of the Association for the first time. He cordially supported the vote of thanks to the new President. Something had been said of some little disputes which had taken place in the Association of late, but those disputes were insignificant compared with the disputes which they had in his early days. As was the case then, he believed that at the present time the Association would be all the better for a little awakening. He did not think that there was one point in the President's address in which he did not more or less cordially concur, and if anyone had desired to get disputable matter out of it it would have been very difficult indeed. The advice given in it was thoroughly sound. He should like, however, to refer to one point relating to the present working of the Association. He was looking through the new "Brown Book" the other day, and was searching for the Class of Design; but to his horror and astonishment he could not find it. He spoke to two or three friends about it, and learnt that the Class no longer exists in name, though it exists under other names and in fragments, such as the Discussion Section, and other sections. He could not help feeling a little regret at the disappearance of the Class, for to his mind the existence of a class of design, in which men were endeavouring to strike out something for themselves, would facilitate more than anything else he could think of the formation of correct ideas, especially when their efforts were criticised by their fellows and neighbours. The Class of Design used to be the backbone of the Association, and he regretted to see that it had vanished, if only in name; not that he wished to set his opinion against that of those who had the practical carrying out of the educational scheme of the Association. In conclusion, Mr. Blashill referred to the advantages which the younger members of the Association might derive from a visit to Rome, and intimated that if anything of the kind were contemplated during the ensuing session, he would gladly co-operate with the Association to bring it about.

Mr. Leonard Stokes wished to be allowed cordially to support the vote of thanks to the President, and he trusted that after the very peaceful and gratifying words which had been uttered that evening all the members of the Association would work in the same spirit of unity that had characterised their efforts previously to a few months ago. He put the vote of thanks to the meeting, which was carried by acclamation.

The President, in reply, thanked the members for that mark of their appreciation, and said that he cordially agreed with what had been said by Mr. Cole Adams and Mr. Aston Webb as to Mr. Stokes's services to the Association. With regard to the disappearance of the Class of Design, to which Mr. Blashill had referred, the explanation was that the whole Studio now, in fact, represented the Class of Design, very much enlarged and, as they hoped, improved. Instead of having a class of design only meeting at rare intervals, it was now constantly meeting in the Studio under the direction of two Instructors and many Visitors, so that, although the Class of Design no longer existed in name, they had by no means done away with instruction in design; on the contrary, they had greatly increased the means of instruction in that subject. With regard to the proposed Italian excursion, the matter should have careful consideration.

The meeting then terminated.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of this Council was held on Tuesday afternoon last, at Spring-gardens, the Chairman, Mr. John Hutton, presiding.

The Proposed Street from Holborn to the Strand. — The Parliamentary Committee brought up a long report on the subject of the proposed new street from Holborn to the Strand. As will be known by our readers, we have already given at great length the details of this proposed improvement.* It is only necessary now to mention here that the Council on July 22 last decided to seek Parliamentary powers to carry out the improvement (subject to what is known as the "betterment" clause), and referred it to the Improvements and Parliamentary Committee to "consider and report jointly whether the limits of deviation on the deposited plans should be sufficiently wide to enable the Council to purchase the property comprised in the larger schedule, and also that between Wych-street and Holywell-street, and whether there would be advantage in the Council seeking power from Parliament to enable the Council to purchase the freehold interest only in such property, and having purchased the same to allow the leases affecting the same to run out, and also whether powers should not be taken in the Bill to proceed with the widening of Surrey-street and Southampton-row." It was also resolved on that occasion "That it be referred to the Public Health and Housing Committee to consider and report on the best mode of re-housing the persons of the labouring class who would be displaced by the construction of the new street and its approaches." The Parliamentary Committee reported that they had also considered the following resolution passed by the Council on July 26, viz., — "That it is advisable to rehouse the persons who will be displaced by the carrying out of the scheme of the new street from Holborn to the Strand, on the lines indicated in the report of the Public Health and Housing Committee, dated July 11, 1892, and that it be referred to the Parliamentary Committee to report if the same can practically be provided by the private Bill relating to the formation of the street, or by any and what other proceeding." The Parliamentary Committee now reported (and the Improvements Committee endorsed and approved the report), recommending, among other things, the extension of the scheme to the north by the widening of Southampton-row, and to the south by the widening of Wych-street, but disapproving the widening of Surrey-street, Strand. The Committee also recommended

"(*f*) That powers be sought in the Bill for the compulsory acquisition of the sites in the districts of Holborn and Clerkenwell referred to in this report, for the purpose of rehousing those of the labouring classes displaced who from their occupations or other considerations ought to be accommodated within a mile of the new street, and that it be referred to the Public Health and Housing Committee to negotiate and enter into conditional agreements, subject to confirmation by Parliament, for purchase of any of the sites in question.

(*g*) That provisions be inserted in the Bill to enable the Council to re-house the remainder of the displaced working population in other districts of London, or in a suburb to be selected by the Council, and to provide, for such persons as may be removed to a suburb, free transit by train or tram, as mentioned in this report."

The recommendations of the Committee were agreed to after a long discussion. Most of the proposals were agreed to substantially unaltered, but recommendation *g* elicited a long discussion, in the course of which the proposal to provide free transit was strongly condemned, as likely to prove utterly unworkable and open to many abuses. Eventually recommendation *g* was carried by the narrow majority of 50 to 46, with the addition, at the end of the paragraph, of the words, "or to provide such other compensation as may be practicable in each case."

Proposed Amendments of the Metropolitan Building Acts.—The Parliamentary Committee reported as follows on this subject:—

"On July 26 last the Council instructed us to recommend to H.M. Government at an early date after the recess to introduce in the next session of Parliament Bills to consolidate and amend the Acts regulating the erection of buildings and laying out of streets in London. We have accordingly prepared and forwarded to the Local Government Board a letter conveying the wishes of the Council. The Council had previously, on July 12, referred it to us to take such steps as we might be advised to secure the passing of a general Act of Parliament, or the insertion of clauses in all future School Board Provisional Order Acts, providing that any buildings to be erected by that Board shall be subject to the general law. This appeared to us to be a matter which might properly be included in our communication to the Local Government Board, and we have accordingly forwarded a statement of the facts which gave rise to the Council's resolution, and have suggested that provision should be made to meet the case either in the Bill for the amendment of the Building Act or in future School Board Provisional Order Acts."

After transacting other business, the Council adjourned at half-past seven.

* See *Builder* for July 9 last for plan and full description of the street as then proposed; and *Builder* for July 30, p. 90, for report of the discussion of the project by the Council.

Illustrations.

ILLUSTRATIONS OF OLD CHESTER.*

VII.—STANLEY PALACE.

SUBJECTS accessible to the photographer have not been included in this series, but illustrations of Watergate-street would be incomplete without a view of that fine old residence, Stanley Palace, which stands in a narrow court, and is almost hidden by the houses on the south side of the street. The very narrow approach might easily be passed many times, even by visitors in search of the oldest really good specimen of timber architecture in Chester.

Stanley Palace was purchased by the Archæological Society of Chester, after the interior had been ruined by the removal of chimney-pieces and objects of interest; fortunately the front shown in the illustration was preserved to Chester, though at one time it was in danger of being transported to America.

The mansion was the City residence of the Stanleys of Alderley, a noted county family, and now ennobled; it is historically interesting as being the place where the unfortunate Earl of Derby spent his last day before he was taken to be executed at Bolton, in 1657.

The portion of the palace remaining shows three gables towards the court, and these are beautifully designed and extremely well carved and ornamented. It was erected in 1591. The dignity of the exterior pervaded the internal construction; the rooms are large, and the panelling, fittings, and floors were of oak.

Having escaped destruction a few years ago, it is fortunate that once more it has become the property of the Earl of Derby, who purchased it recently from the Archæological Society.

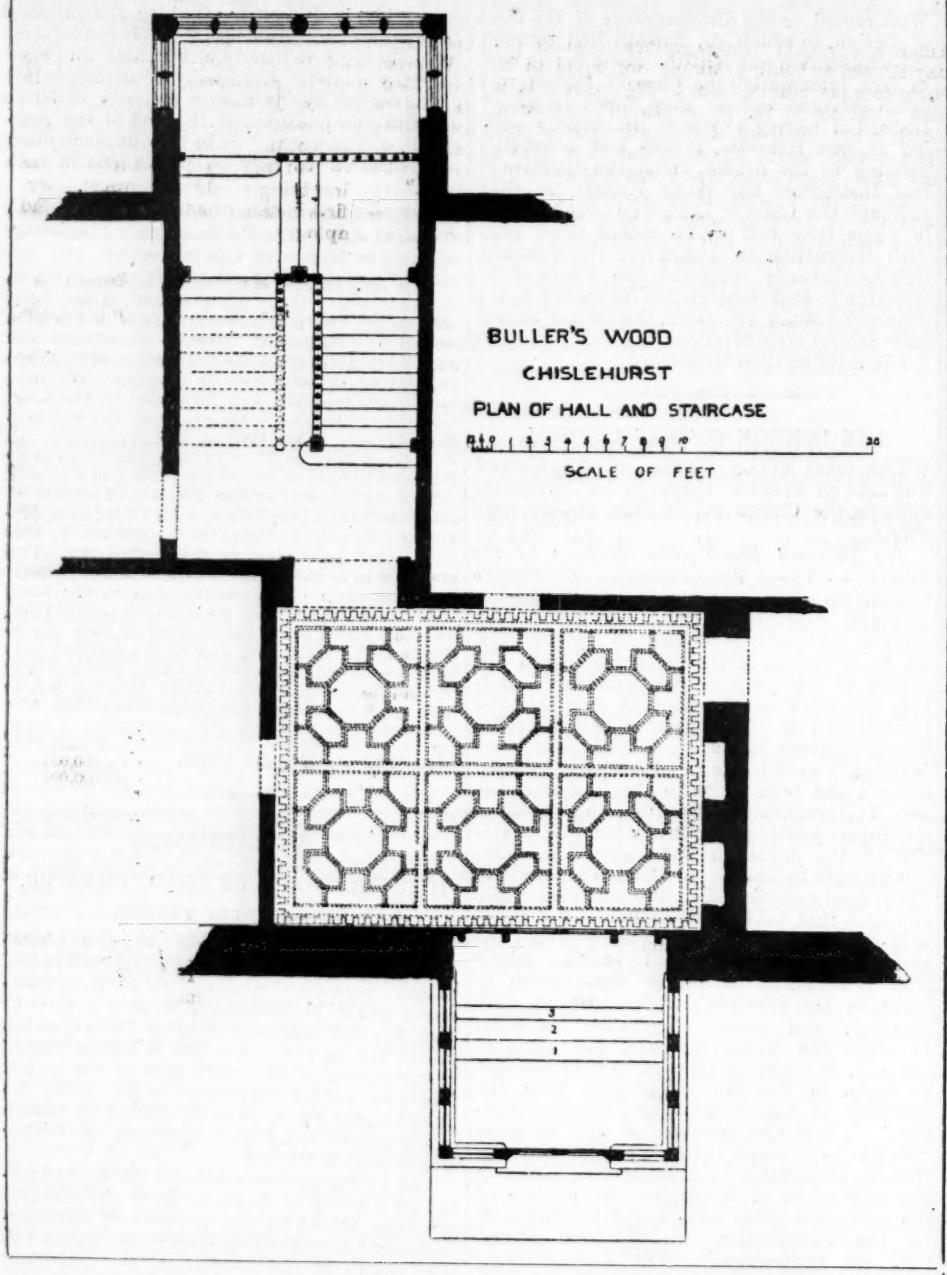
The range of brick houses opposite stands where a row formerly existed.

THOMAS P. IVISON.

* For preceding views of this series, see *Builder* for February 6, February 27, March 12, April 9, May 28, and July 30 last.

COMPETITION DESIGN FOR BIRMINGHAM HOSPITAL.

The illustration represents a portion of Mr. W. H. Bidlake's design for the new Birmingham General Hospital, submitted in competition last February. The conditions required accommodation for 304 beds for the sum of 80,000*l.*, including permanent fixtures, heating and ventilation. No margin was therefore allowed for elaboration, even if such were desirable in a hospital. The materials proposed in this design were red brick walls, with warm buff terra-cotta dressings, and green slate roofs; and the central



porch, with the bay-window and balcony over, were to be entirely of terra-cotta, with a copper ogee roof. The portion represented in the drawing is the administration block.

The drawing was exhibited at the Royal Academy exhibition of this year.

HALL AND STAIRCASE, BULLER'S WOOD, CHISLEHURST.

"Buller's Wood" is a modern house remodelled inside and out. A room and a passage go to make the present hall, of which the interior is here illustrated. The old staircase was in the same place as the new, but the space was lengthened and the bay-window added (see plan).

The hall is panelled and has an oak floor and a pattern plaster ceiling: the staircase has dwarf panelling. All the woodwork is of deal painted in stone colour. The woodwork was made locally by Messrs. Arnaud & Son of Bromley; the plaster ceiling was specially made by Messrs. Jackson.

The architect is Mr. Ernest Newton, and the drawings from which the illustrations are taken were exhibited at the Royal Academy this year.

WINDOWS FOR THE IMPERIAL INSTITUTE.

These windows were designed by Mr. Clement Heaton, with the view of producing stained-glass designs harmonising with the general style of the building, and having reference to the special objects of the Imperial Institute as representative of the union between England and her colonies. The colonies illustrated in these two windows are Australia and South Africa, represented by figures and animals characteristic of each country. We should have liked to see these centre trophies designed with a little more connexion with the border, instead of appearing to be placed in the middle of a white space; but in general the design of the windows is both effective and suitable for their purpose and surroundings.

The original drawings were exhibited at the Royal Academy of this year.

THE ROYAL COMMISSION ON METROPOLITAN WATER SUPPLY.*

We give this week the substance of the evidence of Mr. Baldwin Latham and Mr. Peregrine Birch as to the sufficiency of our present sources of supply if they are utilised. Mr. Latham, it will be seen, dealt with the resources and possible requirements of the whole areas from which the supplies are or may be drawn.

Mr. Baldwin Latham, C.E., gave evidence in support of a memorandum he had prepared, in which he arrived at the conclusion that in the river Thames, the Lea, and the upper waters of the Ouse, and in the chalk formation around London, there is abundance of good and wholesome water that will practically serve London and its neighbourhood for a century to come.

Suggested Connexion between the Thames and Lea Basins.

Referring to the calculations that have been made of the areas of the two valleys, Mr. Latham says:—

"A proper hydrogeological survey of these rivers has, as far as I know, never been made. Two partial surveys of the area between the River Thames and the Lea, made by me in the years 1882 and 1884, showed it was extremely difficult to draw a line between the watersheds of the Thames and the Lea, and in all probability a portion of the water of the Thames basin proper flows underground and furnishes the supply of water to the wells in the lower portion of the Lea Valley, and also to some of the wells under London. Judging from my past experience, it would take a longer time than is now available to complete these underground water surveys, but as to the fact that there is a transference of water from the Thames basin underground in the direction of the lower part of the same basin, there can be no reasonable doubt. There is also a direct communication between the Colne, one of the tributaries of the Thames, above the water companies' intakes, and the tidal portion of the Thames, and a direct transference of water from the upper, or non-tidal, into the lower tidal reaches. It has also been suggested that there is an underground communication between the upper Thames and the tidal portion of the river, and that large volumes of water are discharged into the river between Teddington and Kew, as shown by a recent communication by the late Mr. John Thornhill Harrison, Mem.Inst.C.E., to the Institution of Civil Engineers, and the views contained in this communication are partially supported by such a distinguished geologist as Professor Prestwich, and are, therefore, deserving of serious consideration."

He adhered to the areas which had been submitted to and accepted by former Commissions: Thames above Teddington 3,676 square miles; total to mouth, 5,162. The minimum dry weather flow at Teddington had been given at 12 cubic feet per square mile per minute; but it was brought down to 10 by gaugings in September, 1865. The Lea area is 444 square miles, about 50 being intercepted by a cut made by the East London Company to bring foul waters below the intakes. Gaugings at Fielde's Weir, *plus* the supply of the New River Company, give 13·4 cubic feet per square mile per minute, reduced to 10 in August, 1864, and September, 1865. In the inquiry before the Royal Commission in 1868, the areas of permeable and impermeable strata above Teddington Weir were given as follows:—

Impermeable	1,233·5	miles.
Shallow permeable.....	730·5	,,
Deep permeable	1,712·0	,,
Total	3,676	square miles.

From the impermeable area nothing might flow off in an excessively dry time. The shallow permeable, such as the oolitic strata, from gaugings made by himself in the dry year of 1884, will yield at least 7 cubic feet per square mile per minute which could be depended upon, and the deeper permeable area of the chalk would yield at least 16 cubic feet per minute per square mile, or the absolute minimum flow would never fall below—

730·5 miles	×	7 =	5 113·5	cubic ft. per minute.
1,712·0 ,,	×	16 =	27,392·0	,, ,,
Total			32,505·5	,, ,,

Or 292,549,500 gallons per day, or but 8·8 cube feet per mile per minute from the whole; and it must be a very exceptionally dry year which would give such a small yield as this. In his judgment no such year had occurred for many years past, and if a smaller quantity had been found at Teddington in any recent year, it was clear evidence that the water either flowed away by subterranean ducts or that there had been an error in gauging. Recent gaugings had shown the flow of the Thames, including all abstractions, to be 8·3 cubic feet per mile per minute, and that of the Lea to be 13·4. Inferentially,—

"From this figure it is quite clear that there is either an error in the gaugings of the Thames or the Lea, or there has been a direct transference of a large volume of water from the Thames area into the Lea or some other area, because, having regard to the very much smaller rainfall which falls upon the Lea area, it is obvious that the Lea, mile per mile, could never yield more than the Thames, and all previous gaugings of the Thames and Lea show this has been the case. Although the store of water in the Thames area was considerably less after this particular gauging, yet the actual gaugings of the Thames were shown to increase after the date of this gauging. Gaugings made at High or Chipping Wycombe of the River Wye or Wick within the Thames watershed gave over 20 cube feet per mile per minute. The Wandle at Croydon gave over 30 cube feet per mile per minute. The gaugings of Wend-

* For reports of previous sittings of the Commission, see last volume of the *Builder*, pp. 418, 435, 456, 480, 503; and current volume, pp. 10, 29, 47, 71, 82, 103, 126, 298, 316.

over Springs, within the Thames watershed, by Mr. Hubert Thomas, Mem. Inst. C.E, in August, 1887, show no difference in their yield to account for this low gauging at Teddington." The late Mr. Beardmore gave evidence of average gaugings—for the Thames 34·84, for the Lea 27·33; of minimum gaugings in four dry months in 1864—for the Thames 11·66, for the Lea 11·26. On the abstractions from the upper portions of the Thames Mr. Baldwin Latham says:

"There is a direct transference of water from above the intakes of the water companies to points below the intakes. There are two rivers flowing out of the River Colne; the smaller of the two is called the Queen's or the Cardinal River, and it conveys water which provides the power both to work the waterwheels at Hampton Court Waterworks and to furnish a supply of water for domestic and other purposes, and afterwards passes into the Thames above Teddington, but below the intakes of the water companies. The second river, of a much more important character, is called the Duke of Northumberland's River, and takes a quantity of water, probably not less on the average than 15,000,000 gallons a day, which it conveys to the Bedfont Powder Mills, where it is used for the purposes of power, and afterwards escapes into the River Crane, working several mills in its course, and eventually discharging into the tidal portion of the Thames at Isleworth, below Teddington Weir. These two rivers in low-water periods transfer on an average about 20,000,000 gallons a day from above to below the intakes of the water companies.

There are also seven canals, of which six (one being derelict) are supplied with water within the Thames area and discharge it outside that area. These canals are:—Wey and Arun Canal (derelict); Kennet and Avon Canal; Wilts and Berks Canal; Thames and Severn Canal; Oxford Canal; Grand Junction Canal; and Paddington and Regent's Canal. These canals abstract water from the Thames area probably at a maximum of not more than about 10,000,000 gallons per day. The gaugings at Teddington, of course, include the quantities of water available above that point after allowing for all the abstractions to which I have drawn attention.

Below the intakes of the water companies and above Teddington in the case of the Thames, there are three rivers which convey a considerable quantity of water into the Thames, namely, the Hogg's Mill, the Queen's or Cardinal River, and the River Mole. Either one of these rivers would be sufficient to supply all the water required for lockage below the intakes of the water companies.

Owing to the capacity of the tidal stream below the Teddington Lock, a transference of so much water from a point of intake above Teddington Lock to the point at which it is discharged into the tidal river at Barking and Crossness considerably accelerates the flow of this water out of the Thames, for it is transferred that distance in probably less than a day, whereas if it passed through the tidal channel itself it would be several days in passing to the same spot."

Available River and Well Supplies.

Without exhausting the rivers, the following quantities of water might, in the opinion of the witness, be depended upon:—

	Gallons per Day.
River Lea when fully supplied with storage reservoirs, exclusive of water passing underground	70,000,000
Underground flow taking place in the dry years, 1864, 1865, exclusive of any water flowing from the Colne Valley, and partly supplying Tottenham, Enfield, Cheshunt, and the East London Water Company and some New River Wells	30,000,000
Epsom and neighbourhood within area of Hogg's Mill River, now supplying Epsom, &c	3,000,000
Areas of Rivers Wandle and Ravensbourne, at present supplying water for East Surrey, Sutton, and Croydon Waterworks	10,000,000
River Mole Drainage area, present waterworks, Dorking, Reigate, Leatherhead..	10,000,000
Chalk area east and south-east of London, principally supplies Kent Company ..	30,000,000
Essex area, now supplies South Essex ..	3,000,000
Existing works, Colne Valley	10,000,000
Duke of Northumberland's River, on compensation by pumping tidal water being given	15,000,000
Present provision for taking water from Thames	130,000,000
Total	311,000,000

This table does not take into consideration the utilisation of any of the flood waters of the Thames. The 311,000,000 gallons of water per day set out as being available are equal to 20 cubic feet per minute from 1,727¾ miles. It is also equal to 4½ in. in depth off this area, which is but one-third of the entire area of the Thames watershed. These figures show that a very much larger quantity of water is available in the Thames area if it should ever be required. If adequate compensation was given to the various mill and riparian owners on the streams round London, a very large additional quantity of spring water might be taken beyond what is set out in the foregoing estimate, but the pumping of this additional water without adequate compensation would no doubt very naturally injure the mill and riparian owners having property on the various streams about London. An additional quantity of water from wells in the lower part of the River Lea is also available. When increase of population renders it necessary, provision may be made for storing flood water.

As to the pollution of the drainage areas, the really dangerous population, or that which cannot be controlled, and which is the scattered population inhabiting the rural areas, has absolutely diminished during the past forty years, and it is only in the urban districts and large villages that any increase has taken place, and in all these cases the pollution created by the population can be readily dealt with by the sanitary authorities, and, as a rule, in most of the urban centres, the sanitary authorities do perform their duty in an efficient manner.

In answer to questions, Mr. Baldwin Latham said that he took all the districts outside London which abstracted water from the area available for London that did not come again into the sources of supply. For example, the Colne Valley works draw water above the London intakes, and return it below Teddington Lock. Adding all these districts (which he named) to Registration London, he estimated that in forty years there would be in the area a population of 8,743,526 to be provided for. The consumption he would take at 31½ gallons per head per day for all purposes, much in excess of present use, thus giving 273,233,000 gallons,—or, say, 275,000,000. He had himself gauged all the streams round London except the Lea and the Wey, and he handed in the Lea gaugings, which showed that in the very driest time the Lea could be depended upon for 70,000,000 gallons a day, and the wells in the valley for 30,000,000 more, which probably came from the Colne Valley. Dealing with the sources he had named in the Thames Valley, he said that in the Epsom district there was an area of about 20 square miles, yielding at a minimum 180,000 gallons per square mile per day. Epsom took half a million gallons, might take three, and yet leave three millions, all underground water. The ten millions he had put down for the Wandle did not at all represent the area; and the Wandle lost water, a part of which found its way into the deep wells under London. The Wandle itself would supply 25,000,000 a day. What was pumped by the Kent Company could be more than doubled.

He put in a list of the mills on the various streams, with the number of water-wheels, the estimated horse-power, and the money value of the water-power. On the assumption that all the water he had indicated were required, mills on streams to which the water was not returned would have to be compensated by being supplied with steam-power. The rights of riparian owners, irrespective of the mills, would not be affected, because there would always be water in the streams as long as the mill-heads were kept up. In gauging chalk districts for many years, he had found, and had made allowance for, variations between rainfalls and stream flows, the Wycombe area, for instance, yielding much less than the Croydon area. He considered the construction of reservoirs in the Thames Valley quite feasible, and he had constructed storage reservoirs at Lechlade for 300,000,000 gallons for the late Mr. Campbell. In the Lea Valley there were sites on which storage reservoirs might be constructed. He had not personally surveyed them, but schemes had been brought out by Mr. Rendel and Mr. Milne. He knew some of the suggested sites, which were probably not in the best positions. There appeared to be some mistake about the two gaugings of the Thames in August 1887, as given by the Conservancy, for a higher flow was recorded by two independent gaugings by Mr. Pearce and Messrs. Taylor & Son.

The Chairman said that if particulars were handed in he would have them examined by the Assistant Commissioner.

Witness said he did not suggest pumping from the chalk in preference to reservoirs in the valley of the Thames. The time would come when both would be necessary. In these particular areas nothing more was wanted than the supplies he had indicated; and after these supplies the first thing would be storage reservoirs. In the first instance he would recommend increased pumping.

Thames Surplus Available for Storage.

Mr. R. W. Peregrine Birch, C.E., in his statement, said it appeared from the Thames Conservancy records that in a very exceptionally dry season the flow of the Thames past the companies' intakes at Hampton and Molesey may have fallen as low as an average of 281,060,000 gallons a day for a fortnight. This was the average flow from August 2 to August 15, 1887. The companies were then drawing 101,149,299 gallons, leaving 180,000,000 to pass by Molesey Lock and Weir. All this, less 5,000,000 gallons for navigation requirements at Molesey Lock, might be used for water supply purposes without any commensurate injury to other interests. The Mole and Hogg's Mill River, below the intakes, would in that case provide ample for the reach above Teddington Lock. There were, then, available from the river, in round figures, the following quantities per day:—

	Gallons.
Taken in August, 1887	101,000,000
Additional, available without injury	175,000,000
	276,000,000
Add from the Lea and chalk wells	84,000,000
Total available	360,000,000

The Lea and chalk wells provided 82,500,000 a day in August, 1887. The total was enough, according to Mr. Binnie, to give 30 gallons per head to 12,000,000 persons. If by improved management and fittings the quantity per head could be reduced to 20 gallons, then the 360,000,000 gallons would suffice for a population of 18,000,000. To the total must be added the supply obtainable from the chalk water, "the natural course for which to the sea is under the London clay." The water left in the Thames is of the same quality as that taken out. The abstraction of it would reduce the summer velocity of the Thames between Hampton and the New Richmond Weir, but this is unimportant, as no summer velocity is of any use for scouring purposes. The water can be maintained at the present summer or any other convenient height, and the volume of fresh water provided by the Mole, Hogg's Mill River, and Crane would keep the rivers sweet and pure for pleasure purposes, while the decreased velocity between Teddington and Molesey would be an advantage for boating. The Serpentine in Hyde Park is kept wholesome by a supply pumped to it from two wells.

With regard to the tidal portion of the Thames, Mr. Binnie, he thought, had been influenced by what he regarded as the matured opinion of Parliament, indicated by the rejection of the Grand Junction's application to remove their intake to Windsor in February, 1888. But the vote of the House of Commons was unduly influenced by irresponsible and extraordinary statements, which the promoters had no opportunity to refute; and it was very unlikely that any future application would be met in the same way. Any mischief caused by the lack of clean water at the point of sewage discharge must be remedied either by putting more clean water into the river at or above that point, or by discharging less sewage there. The non-abstraction of Thames water would increase the dilution of the sewage by 200,000,000 gallons; but by carrying the sewage twenty miles further down the river to Shellhaven seven or eight times more dilution would be obtained than would be given by the whole flow of the Thames.

Whilst regarding as unreasonable any restriction upon the amount the water authority may take from the Thames, he recognised the feeling against further abstraction, and therefore considered the storage space that might be required if additional water was to be taken without reducing the minimum flow below that already authorised. The lowest flows are re-

corded in 1887; and in such a year of drought no storage would be required for the present authorised abstraction of 130,000,000 gallons. But, if it were 25, 50, 75, or 100 per cent. more, the quantities to be taken would be as stated in column 1, the quantities to be taken from storage would be those in column 2, and the number of days when water must be partly taken from storage are given in column 3:—

	1. Gals.	2. Gals.	3. Days.
25 per cent. more	162,500,000	122,000,000	8
50 ,, ,,	195,000,000	476,000,000	15
75 ,, ,,	227,500,000	1,228,000,000	32
100 ,, ,,	260,000,000	2,500,000,000	49

And there would be no day on which the water must be wholly taken from storage.

Examined upon this statement, Mr. Birch stated that he had devoted a large part of his professional life to the consideration of hydraulic subjects. In conversation with the Chairman he admitted that, if he had taken 175,000,000 gallons from the Thames when the discharge at Teddington was only 179·6 million gallons, he would have left only 4,500,000 gallons; but that did not alarm him, because, if the companies had taken every drop they could, leaving enough for Molesey Lock, they would not have appreciably injured any interest at all for that fortnight. It would probably be a century hence before so large an abstraction would have to be made. Reminded that there was a day in August, 1887, when only 153,000,000 gallons did go down, he said that the storage necessary for equalising a week's flow was a very small matter. "But this table," said the Chairman, which I confess rather startled me, "is without calculation for storage at all." Answer: "Without more storage than is necessary for equalising a fortnight's flow, and that is a very trifling matter indeed. I mean the companies have storage quite enough for the present moment." Witness handed in a table showing that for the fourteen days in August, 1887, the average flow at Teddington was 198,000,000, whilst the Companies had taken 101,000,000, making a total of 299,000,000, of which one-sixth was from the Mole and Hog's Mill river, leaving 281,060,000. Deducting the 101,000,000 taken by the companies, 180,000,000 were left to pass Molesey. It was certain that 175,000,000 gallons more than is now taken could be got in the worst season, without hurting anybody, and without necessitating any reservoir accommodation at all. Any interests that might suffer slightly could be compensated at a much smaller cost than would be incurred by getting water from any other source. Any reduction that was made in the water for the navigation below the lowest lock could be made good by a little dredging in the reaches below. The new weir at Richmond was to arrest the last half of the ebb tide. If the water could be arrested a foot higher than it was proposed to arrest it, and the foot of water were discharged in the last four and a-half hours of the day, the actual minimum flow of the river could be maintained, the scour of the river would be the same as now, the depth would be the same, and it would be in every respect the same as it is now at the four and a-half hours of the worst period of the flow. The summer flow is no good at all for scouring purposes. It is the floods and the freshets which keep the river scoured. The cost of taking the London sewage twenty miles further down the river would perhaps be one-twentieth part of what it would be to bring clean water into London; and the point of outfall indicated was that selected by Sir Benjamin Baker and Mr. Binnie.

We are obliged to break off here this week. We have in type some further evidence as to the reservoir schemes propounded by Professor Robinson and Messrs. Marten and Rofe; also a report of the somewhat searching examination which those engineers and their proposals underwent at the hands of the Commissioners. We are also holding over until next week some evidence as to the claims of Hertfordshire and as to well supplies.

COMPETITIONS.

Public Baths, Rotherham.—We understand that the designs submitted in this competition by Mr. Richard J. Lovell, of London, have been placed first, and those of Messrs. Mangnall & Littlewood, of Manchester, second.

Books.

Self-help in an Alarm of Fire; with Hints for Greater Safety. By R. W. Boyd, Associate of the Sanitary Institute of Great Britain. London: A. Boyd & Son.

THIS pamphlet, for it is no more, deserves the attention of all householders. It sets forth in plain language the possible causes of fire to be most guarded against, in an ordinary dwelling-house especially, and the best way of acting if a fire does break out. Some of the recommendations and criticisms have reference to public as well as private duties. The author remarks that as a house is never attacked by fire at the top and bottom at once, there is little to be feared (for life) if there is a safe and ready exit both above and below, and suggests that a proper fire-escape opening should be required by law at the top of every house. This would be an excellent arrangement, but it would almost require houses to be planned and constructed on purpose, and could hardly be well applied to existing rows of town houses as they stand. Most of the advice given, however, is entirely applicable to present circumstances, and we recommend owners and tenants, and persons in charge of schools or public buildings, to get it and profit by it.

Haddon Hall Illustrated. By W. E. Cooke. London: S. Philip & Son; Liverpool: Philip, Son, & Nephew; Nottingham: Norton & Co. 1892.

Probably we shall not be wrong in assuming that the public attention which is being directed to Haddon Hall by the performance of the new operetta at the Savoy Theatre has been the main cause of the production of this folio of pretty illustrations of the old mansion. The illustrations are executed in that form of crayon lithograph which is much out of fashion with architects and artists, but is still popular with the public, and has the practical merit of giving a considerable degree of effect with comparatively little trouble. The interiors are the best, though the architectural details are very much slurred over. In short, the book is of no value to architects, but it is a pretty drawing-room table volume for the general public, who have no scruples of conscience as to architectural detail.

Dod's Parliamentary Companion, 1892. London: Whittaker & Co. and George Bell & Sons.

This well-known and well-nigh indispensable little book is now in its sixtieth year and sixty-seventh issue. No further testimony to its usefulness is necessary, for if it had not fulfilled its purpose it would not have enjoyed so many years of popularity and success. Its contents include not only lists of the members of the Houses of Lords and Commons, a list of all the constituencies, brief biographical and genealogical notices of Lords and Commons, and lists of officers of both houses, but a great deal of interesting and reliable matter, admirably arranged, in explanation of Parliamentary terms and proceedings. The issue now before us includes the new Parliament and Ministry.

The County Councillor's Directory. Edited by C. H. W. Biggs. London: 139, 140, Salisbury-court.

This is the second issue of a very handy book of reference. It purports to contain a list of the aldermen and councillors for all counties and county-boroughs under the Local Government Act of 1888.

TRADE CATALOGUES.

The Ruabon Brick and Terra-Cotta Company (Limited) send us their new catalogue, which is a well-got-up folio volume containing one hundred plates illustrative of their productions, which include moulded and diaper bricks, bands, string-courses, panels, cornices, balustrades, pilasters, capitals, corbels, vases and terminals, roof and ridge tiles, chimney-pots, and, in short, architectural details and features of all kinds in brick and terra-cotta, both for internal and external use. The mouldings are various and mostly well profiled. In regard to stock decorative work, of course architects as a rule do not care very much for that, and for their purpose it is better that such designs should at all events be kept as simple and conventional as possible. The majority of the ornamental panels and strings shown in the catalogue are, from an architect's point of view, too elaborate and too much like carving. The kind of things that may come in usefully to an architect, as supplying the place of a moulded string-course, are such as Nos. 198 and 285, which are well-designed and sufficiently simple to bear mechanical repetition; the others will be useful to many of those builders and estate agents who wish to put some architectural appearance on to their houses without having them specially designed by an architect.

The Wenham Company, Limited, of Upper Ogle-street, W., send us illustrated price-lists of their now well-known "Wenham" gas-lamps, in new designs for indoor and out-door illumination. They also send an illustrated price-list of the "Wenham" louvre ventilators.

Mr. T. Freeman, of Phœnix-street, St. Pancras, N.W., sends us "Freeman's Handy Book," which, though not exactly a catalogue, contains lists of bricks, tiles, sanitary ware, &c., of all kinds. The lists are, in fact, quotation-sheets, readily detachable from the book, and they are intended for use by builders and others seeking quotations from Mr. Freeman for the goods enumerated.

Correspondence.

To the Editor of The Builder.

THE INSTITUTE AND ARCHITECTUR .

Sir,—In the *Builder* for October 22, 1892, p. 314, there appears a note containing a denial by Mr. Farrow of the remark attributed to him by Mr. Jackson, "that as a matter of architectural education the preparation for the Institute Examination is perfectly useless." I was present at the meeting of the Architectural Association on December 11, 1891, and I certainly did hear Mr. Farrow make the remark in question. As Mr. Farrow's speech was made in the course of debate, it is very natural that this remark should have slipped his memory. As to your excellent reporters, I need only point out that they do not report verbatim, and occasionally use their own judgment as to what they insert or omit.

You also refer to an inference drawn by me from an advertisement published by an A.R.I.B.A. in these terms:—"Is this what can be called fair fighting?" The person in question had undoubtedly used the affix A.R.I.B.A. to advance his commercial interests, and I quoted his action as one amongst other instances tending to show that the reason for which the Institute diploma was sought was its supposed commercial advantages, with the natural consequences illustrated by my instance; and that, therefore, the Institute was wrong in supplying machinery which could be wrested to such a degradation of architecture. This, I maintain, was not only fair fighting, but a perfectly sound inference on the facts of the case.

Reginald Blomfield, M.A.

October 22, 1892.

*** We are still of opinion that to select the escapade of a dishonest man who was using a title which he had no right to, as a typical instance of the kind of use which may be made of membership of the Institute, is an example of that kind of argument which is represented in the proverb, "Any stick is good enough to beat a dog with." If a dauber in some out-of-the-way district announced himself as "A.R.A.," in order to get commissions for pictures, would Mr. Blomfield consider that a reason for attacking the Royal Academy?

In regard to the question of what Mr. Farrow said, we may say that our report of that meeting was made with unusual care in consequence of the unusual interest of the discussion; that the editor of this journal was present and heard Mr. Farrow's speech, and does not remember any such strong expression; that our reporter does not remember hearing it (and it would have struck us both if we had heard it), and that Mr. Farrow himself says he did not use it, and that it does not represent his opinion; and Mr. Farrow is a cool and collected speaker, generally careful of his words. It is a case of three memories against two, and we are inclined to think Mr. Farrow is correct. Perhaps the subjoined note from him gives the true explanation.—Ed.

"Dear Sir,—It is probable that Mr. Blomfield and Mr. Jackson may have at some time, or even at the meeting referred to, heard me express what is my opinion, 'that *cramming* is a perfectly useless preparation for the Institute examination,' and, of course, *a fortiori*, 'as a matter (or 'means') of architectural education.' Fred. R. Farrow.

H. H. Statham, Esq."

PARTNERSHIP IN ART.

Sir,—Your correspondent, "An Artist," in your issue of October 15, is far too ingenuous.

The cases he cites of architects in partnership do not touch the point at issue, because I believe all the names he mentions are those of fully-qualified architects.

What has he to say of those men who call themselves "artists in stained glass," who could neither draw a cartoon or paint a piece of glass if their very existence depended upon it? Of such there are a goodly number, and among them are University graduates, solicitors, clerks, tailors, iron-founders, oil and lead merchants, &c., &c., all posing as "artists in stained glass, and "some of them turning out a considerable quantity of Art (save the mark!) from their works.

These people are, in the main, the worst of employers, and are notorious for the fact that they pay the lowest wages known in the profession to their art-workmen. So well, indeed, do they know this that, in order to keep their men quiet, a common practice among them is to keep a comparatively small staff, and to allow them, after doing eight or nine hours' work in the shop, to take other work home with them in order to make up a decent living wage.

One of these so-called artists has at present in his painting-rooms nine men and about ten or more boys and youths varying in age from thirteen to nineteen years, these latter receiving in wages from 5s. to 18s. per week.

Yes, Sir, "manufacturers" and "dealers" are the right names for these people, and many glass painters sincerely hope that you will open your columns to the discussion of this subject of "partnership in art," especially as applied to stained glass, and that the result may be to squeeze out of existence this unnecessary class of profitmongers.

An Art Workman.

THE FIFTEENTH-CENTURY MADONNA.

Sir,—Oh, horror! Is Mr. Vallance going to copy the fatal mistake of nine-tenths of our modern church "restorers," and patch his interesting and valuable fifteenth-century figure with "Churchwardens' Gothic"? If he wants to destroy all its intrinsic worth let him do it; but his reward will be the unmeasured condemnation of all persons of taste, whether artists, connoisseurs, scholars, or antiquarians. I knew an instance of a fifteenth-century font in a church that was taken in hand by the "restorers" (a bye-word now for "destroyers"), and had the old font tooled all over to make it look smart and clean. A storm of not very complimentary names was soon hurled at the empty heads of those who had done it. Would he patch and repair his antique with wood from the carpenter's shop, and make a new thing of it? or stain the clean wood to make it look like the other? Would he tool over Cleopatra's Needle on the Embankment, and patch the defective places with fresh quarried granite? The one would be as reasonable as the other. Has the figure lost parts of the drapery and hands by the tooth of Time? Well, the more's the pity that it should be so, but that misfortune cannot be helped. What remains is, at all events, genuine, and therein lies its interest. Its work is sacred, for it was done by hands that have gone to dust some centuries ago. Let it alone—let it alone.

P. O. Hutchinson.

VESTRIES AND HOUSE-DRAINAGE.

Sir,—Will you kindly allow me to correct the following *errata* which occur in my letter of last week?

"Nine in. *by* 6 in. pipe where 4 in. should be," should read, 9 in. *and* 6 in. pipes where 4 in. should be used."

Further on, through my accidentally omitting a couple of words, my remark reads that the *trap* is big enough for a town, whereas I meant to call attention to the absurd size of the *drain*,—viz., 9 in.

J. Kemsley.

Public Library, Ayr.—Mr. Campbell Douglas writes to say that this building should have been described on p. 325, *ante*, as by Messrs. Campbell Douglas and Morrison, architects, and not ascribed to the former only. The mistake was not ours.

Surveyorship Appointment.—At a general meeting of the Trustees of the Rugby Charity, held at the Judge's Lodgings at Warwick on the 24th inst., the trustees appointed to the vacant Surveyorship of their Middlesex estate Mr. Charles K. Bedells, F.S.I., and Mr. C. Herbert Bedells, F.S.I., practising as architects and surveyors in London, under the style of "Lander & Bedells." The estate, which consists of about 180 properties in the neighbourhood of Bedford-row, adjoins the larger estate of the Harpur Bedford Charity, which since 1882 has been under Messrs. Lander & Bedells' management. The incomes from these two estates go to the maintenance of the large public schools at Rugby and Bedford, having been devoted to that purpose by their respective founders, Lawrence Sheriff, grocer, of London, and Sir William Harpur, a Lord Mayor of London.

The Student's Column.

CONCRETE.—XVIII.

AGGREGATES, MIXING, ETC.

FOR small quantities, the most convenient method of breaking stone and brick for aggregates is with an ordinary stone-breaker's hammer, but when large quantities of concrete are required, breaking the aggregate with hammers is slow and very expensive. Besides this, the stones broken by hand are too uniform in size to make the best concrete; experiments have shown that machine-broken stones give better results. There are several kinds of stone-breaking machines made nowadays, from the hand-power machine, which one man can work, to the powerful machine which will turn out about ten tons of 2 in. cubes in an hour. Machines of the "Blake" type break the stone by means of a movable jaw, which cracks the stone between itself and a fixed part of the machine. Others, such as Messrs. S. Mason & Co.'s (Leicester) "Continuous Stone Breaker," consist of a vertical cylinder in which a toothed or grooved cone is placed base downwards, the base of the cone being slightly less than the internal diameter of the cylinder; the stone is fed into a hopper over the cylinder, and is crushed between the cylinder and the cone by the revolution of one or other of them, according to the purpose for which the machine is intended to be used. It is said that it will do nearly twice as much work as any jaw stone-breaker. Other machines crush the stone between rollers, and will turn out aggregates in pieces from 3 in. down to ¼-in., or, with finer rollers, will grind the stone to sand.

In all aggregates broken by machinery there is a certain amount of dust, which detracts somewhat from the strength of the concrete; this dust is sometimes removed by means of a blast of air, but more usually by washing the broken material immediately before mixing it with the cement. Some experiments, carried out for Sir John Coode in 1873, show the weakening effect of this dust. The sand, which was formed during the crushing of syenite for concrete purposes, was made into six briquettes, with an equal quantity of Portland cement; other six briquettes were made with the gritty portion of the same sand, the impalpable powder being removed by a blast of air. The latter briquettes, at the end of seven days, were 18 per cent. stronger than those which contained dust.

Size of Aggregate.—The smaller the size of the aggregate the smoother will be the surface of the finished concrete, but a small aggregate gives weaker concrete than a large one with the same amount of cement. The size of the largest pieces varies in different specifications and for different purposes. For concrete in large masses, as in breakwaters, dock-walls, &c., it is best to have an aggregate ranging up to a considerable size, the largest pieces being such as will just pass through a 3, 3½, or even 4-in. ring. The same reasoning we employed to explain the advantages of coarse sand over fine sand (Chapter XIV.) applies to the aggregate; the greater the number of pieces in a given quantity of aggregate the larger is the extent of surface to which the mortar has to adhere, and consequently the greater must be the excess of the mortar over the voids. But there is a limit of size which it is not advisable to exceed. This limit was fixed by the Metropolitan Board of Works in 1872 at 2 in. for all concrete in buildings, but there is no doubt that, for foundations and walls more than 12 in. thick, an aggregate containing some larger pieces would prove, strength for strength, more economical. Pieces too large have a tendency to wedge together and to leave cavities in the concrete; they should be laid separately by hand as packing in the different layers.

It is not often that the size of the largest pieces of the aggregate is allowed to exceed 4 in., even for concrete in large masses, as in breakwaters. For the foundations and walls of buildings, and for retaining walls, the limit of size may be placed at 3 in., or one-sixth the thickness of the foundation or wall, if this be less than 18 in. and more than 7 in. In London, of course, the maximum limit is fixed at 2 in. for all concrete in buildings. For walls and floors less than 7 in. thick, the limit of size may be placed at one-fifth the thickness of the concrete.

Packing.—Considerable saving can be effected by packing rough stones into the concrete while it is being deposited. This is sometimes done to the extent of 20 per cent. of the total bulk of the wall. In heavy engineering works, some of the stones thus inserted contain a cubic foot or more, but in buildings smaller pieces must be used according to the thickness of the wall or foundation. Care must be taken that none of these lumps of stone are placed within 3 in. or 4 in. of the face of the wall or of each other, and the concrete should contain a proportionate excess of mortar in order that the packing may be properly united with the rest of the mass. It must be remembered that the difficulties of superintendence are much increased when packing is specified, as there can be little check on the quantity of packing which a contractor can put into a wall. For this reason it is better, in contract work where the constant supervision of a clerk of works is not available, to forbid all packing and to use a well-broken aggregate, irregular in shape and size, and containing, therefore, as small a quantity of voids as possible. In this way, the cement will bind a larger quantity of aggregate, and the cost entailed by forbidding packing will be, to some extent, reduced.

Measuring.—The various ingredients must be carefully measured in boxes separately. For rough work, carried out by the owner's workmen, the aggregate may sometimes be measured with sufficient accuracy in wheel-barrows, a certain number to each bag of cement. But for all concrete which may be subjected to considerable stress and for all contract work, each ingredient must be measured in a box. On no account must any deviation from this rule be allowed, for without accurate measurement the concrete cannot be of uniform strength,—some portions will have too much cement and some too little, and the latter will be the measure of the strength of the concrete. And in addition to this lack of uniformity, it is quite possible that the proportion of cement used will be less than that specified, and in this case the whole mass suffers.

The quantity of concrete which can conveniently be mixed by hand at one time does not exceed one cubic yard, but it is better to mix less than this, especially if the concrete be fine (as for thin walls, floors, &c.) or the cement be quick-setting. Having decided upon the amount of aggregate to be measured, it is easy to calculate the size of the boxes required for that and for the other ingredients. There are several methods of measuring the ingredients. Sometimes a bottomless box or frame is used for the aggregate, and this is placed on the mixing board and filled level with the top; upon it then is placed another bottomless box of the same length and breadth but of smaller depth,—varying according to the specified ratio between cement and aggregate,—and this box is then filled with cement and struck level with a straight-edge. The best method, perhaps, is to fill the aggregate into a bottomless box as above, then place on it another similar box of suitable depth and fill it with sand; lift the two boxes by the handles in their ends, and the sand is spread over the aggregate; the cement must be measured in a box (with a bottom) and emptied over the heap. For instance, in the case of concrete specified to be composed of 1 part cement, 2 parts sand, and 4 parts broken stone, the stone could conveniently be measured in a frame 4 ft. by 2 ft. 6 in., by 2 ft. deep, the sand in a similar frame 1 ft. deep (or preferably in one rather deeper, say 3 ft. by 2 ft. 6 in., by 1 ft. 4 in. deep), and the cement in a proper box 2 ft. by 2 ft., by 1 ft. 3 in. When large shallow boxes or frames are used, there is more liability of inaccurate measurement. In exposed situations, the mixings should be done under cover, so that the cement may not be carried away by the wind.

Washing the Aggregate.—We have already pointed out the dangers which may arise from the use of dirty aggregates, and have stated that these can be obviated by thoroughly washing the aggregates. The washing can most conveniently be done immediately before mixing the concrete, and can be carried out on the same platform, although it is better to have separate platforms, as the slope, which is required in the washing-platform, may cause cement to be carried away if the platform be used for mixing purposes. The washing-platform may be of boards or planks, and must be laid with sufficient inclination, so that the dirt can be easily removed by the water. The material should be shovelled backward and forward by

one or more men, an ample supply of water being at the same time poured upon the heap by another man. Thorough agitation of the aggregate and a plentiful amount of water are needed, and the operation should be continued until the effluent water shows little trace of impurity. The washing of the aggregate leaves it in a damp state, and, therefore, in the best condition for making strong concrete. Where washing is not adopted, the aggregate ought to be sprinkled with water before using, as a dry aggregate absorbs moisture from the cement, and leaves it without sufficient water for its proper induration.

Mixing.—There are two ways of mixing concrete, the "dry" and the "wet;" the former is the method usually adopted in England, the latter is common in France; the name *béton* has been applied to concrete made in the French way. For cement-concrete the English method is the best, for lime-concrete the French has the advantage.

Concrete can be mixed either by hand or by machinery, the latter for large quantities being considerably more economical. Mr. Bernays, in 1880, recommended the mixing of concrete by hand, for the reason that machines cannot be fixed as near the place of deposition or moved as easily as simple wood platforms can; at the same time he acknowledged that some machines did their work perfectly. Since that time, however, machines have come more and more into use, and nowadays many are employed by building contractors, although they are not, of course, as large and powerful as those used in harbour-works and the like. For small quantities of concrete, that is to say, in the great majority of buildings in which concrete is used, mixing by hand is almost invariably adopted.

Hand-mixing requires considerable care. The points to be aimed at in "dry" mixing are the following:—The platform should be as near the place of deposition as possible. The sand and the broken material or gravel must be turned over so that the voids in the latter are filled by the former; the cement must be distributed equally throughout the whole; sufficient water must be added so that it may cause the cement to form a thin film around every particle of sand and fragment of larger material, but not enough to wash away the cement; with quick-setting cement the operations must be rapidly completed. Mr. Grant recommends that the ingredients be turned over at least three times dry, the water then added, and the whole mass turned over three or four times wet. It is not often, however, that so much manipulation is specified; more commonly it is specified that the materials shall be turned over twice dry and twice wet. Sometimes the operation is performed entirely with spades, either two or preferably more men being employed, and the heap being thoroughly turned over by them in shovelling it from one part of the mixing-platform to another, and back again; the materials have then been turned twice dry. Water in proper proportion is now sprinkled upon the heap by another man through a rose; if the water be poured from pails, it is probable that some of the cement will be washed away and that excess of water will be used. The materials are again turned over during the operation of sprinkling, and after a fourth turning the concrete should be ready for use. Sometimes, in addition to the two or more men with spades, another man with a large two-pronged rake is employed to rake the ingredients to and fro as they are turned by the spades; this is an improvement on the other method.

Sometimes the cement and sand are first carefully mixed and afterwards the broken stone is added, the whole is then well turned over before the water is added, and again afterwards. This method has much to recommend it.

In the French method of mixing *béton*, the lime or cement and sand are first made into mortar, and this is then mixed with the broken stones, &c. When lime is the matrix employed this system is the best. The lime, if in lumps, can be thoroughly slaked, and can in any case be ground in a mortar mill, thus eliminating the danger of blowing which may result from the hydration of coarse particles of lime after the fine portion has set. The mortar may be mixed in the proportion of 1 part lime or cement to $1\frac{1}{2}$ or 2 parts sand. Lieutenant Wright thus describes the operation of making *béton* at Boston (U.S.A.):—"The concrete was prepared by first spreading out the gravel on a platform of rough boards, in a layer from 8 in. to 12 in. thick, the smaller pebbles at the bottom and the larger on the top, and afterwards spreading the mortar over it as uniformly as possible. The materials were then mixed by four men, two with shovels and two with hoes, the former facing each other, and always working from the outside of the heap to the centre, then stepping back, and recommencing in the same way, and thus continuing the operation until the whole mass was turned. The men with hoes worked each in conjunction with a shoveller, and were required to *rub well into the mortar* each shovelful as it was turned and spread, or rather scattered, on the platform by a jerking motion. The heap was turned over a second time in the same manner, but in the opposite direction, and the ingredients were thus thoroughly incorporated, the surface of every pebble being well covered with mortar. *Two* turnings usually sufficed to make the mixture complete, and the resulting mass of concrete was then ready for transportation to the foundation. The success of the operation, however, depends entirely upon the proper management of the hoe and shovel, and though this may be easily learned by the labourer, yet he seldom acquires it without the *particular attention of the overseer*."

OBITUARY.

Dr. August von Essenwein, the curator of the Arts and Crafts Museum at Nuremberg, has died of heart disease, at the age of sixty-one. He had studied architecture at Vienna under Ferstel, and had held various posts of importance, such as City Architect to Graz. In 1866 he was invited to take office at the Nuremberg Museum, and in the twenty-five years of his curatorship the collections were greatly extended and entirely rearranged. He himself designed the extension of the old museum buildings, drawing every detail, including the coloured glass, and it was this building, together with an extension of the Town-hall of Nuremberg, which gave him the repute of an able architect as well as invaluable custodian of some of Germany's important art treasures. A great number of writings from his pen have appeared in the Nuremberg Museum *Gazette*; of others we would mention his "Mediæval Brick Architecture in North Germany" and his "History of Fire-arms." It will be exceedingly difficult to replace him.

Herr Julius Hennicke, late of the firm of Von der Hude & Hennicke, of Berlin, has died at the age of sixty. He was well-known throughout Germany as a hôtel specialist, the large Central and Kaiserhof hôtels in Berlin among many others being built from his drawings. The new Lessing Theatre was one of the last buildings of the firm as such, which, by the bye, was one of the first firms of so-called private architects to be established in Berlin when only Government architects practised in that city. Herr Hennicke in reality introduced the fine new covered markets Berlin boasts of; and of other municipal work we may mention the great slaughter-house built from his plans at Buda-Pesth in 1871.

GENERAL BUILDING NEWS.

Additions to the Oxford University Museum.—A large addition, says the *Oxford Times*, is being made to the University Museum, Oxford, for the department of Human Anatomy. The extension is on the east side of the main building abutting on the parks, and the main entrance is on the north front. In the basement there is a tank-room 60 ft. by 29 ft., a working lobby 5 ft. by 21 ft., inspection-room, preparation-room, coal-cellars, attendant's rooms, general stores, and the usual offices. The principal rooms on the ground floor are the dissecting-room, 60 ft. by 30 ft.; museum, 30 ft. by 40 ft.; two private rooms, vestibule, prosector's room, and a lecture theatre, the latter being 30 ft. square. The museum has a gallery running all round at the height of 11 ft., and both that and the dissecting-room receive light through the roof from the north side only, to avoid the glare of the sun, Rendle's patent system of glazing being used. The microscopical room, which is 18 ft. by 30 ft., is on the first floor, where there are also two assistants' rooms. At the north-east angle of the building is a large lantern over the lecture theatre, together with a ventilating shaft, and the principal features in the north elevation are the octagon turret, and the gables and dormers over the windows. The chief decorative work, however, is the window lighting the museum in the east elevation, balustrading being placed round the lecture theatre. The stone used is box-ground, from Bath, and pugging is used between the principal floors to deaden the sound. The builders are Messrs. Symm & Co., Oxford, the architect being Mr. H. Wilkinson Moore, also of Oxford, and the clerk of the works Mr. R. England. Externally the building is of freestone, like the rest of the Museum, but it is roofed with tiles instead of slates.

St. Andrew's Church, Paignton.—On the 5th inst. Mr. Sampson Hanbury, High Sheriff of Devon, laid the foundation-stone of the St. Andrew's Church, Sand's-road, Paignton. The actual work of erecting the church, for which Messrs. Fulford, Tait, & Harvey, of Exeter, are the architects, was commenced a month or two ago. The contract for the first section, which comprises the sanctuary, choir, morning chapel, priests' and choir vestries, and tower up to the lower chamber, was secured by Mr. E. P. Bovey, of Torquay, for 2,562*l*. The total cost of the whole building is estimated at 6,550*l*. The style is based upon that of the French fourteenth century period. When completed the church will accommodate 600 persons, in addition to the clergy and choir. The building will be executed in local red rock, with box ground stone dressings externally, and Ham Hill stone dressings internally. The flooring of the chapel and vestries will be of wood blocks, and that of the chancel will be laid in marble mosaic, while the steps to the sanctuary will be of Devonshire marble, and the columns supporting the arches will be of the same material. Behind the altar space is given for the erection of a reredos at a future time. The roof over the chancel and morning chapel will be of oak, while that portion of the latter which is situate in the tower will be covered by groined stone vaulting. The building will be heated with hot water, the chamber for which is included in the present contract. Mr. J. Pullen is clerk of the works.

Municipal Buildings, Morley, Yorkshire.—On the 8th inst. the foundation-stone of the Morley Municipal Buildings was laid by the Mayor of the borough (Alderman Clough). The buildings when completed, says the *Leeds Mercury*, will comprise Municipal Offices, Borough Court, Police Department, and Town-hall. The site is bounded on the east by Queen-street, on the south by Albion-street, on the north by Wellington-street, and on the west by an intended road 10 yards wide. From back to front the ground falls about 19 ft. On the ground floor there will be on the left of the principal entrance the Town Clerk's and Borough Accountant's offices, to the right the Surveyor's and Nuisance Inspector's offices; along the north corridor are to be the Borough Court, Magistrates' Retiring-room, and Magistrates' Clerk's rooms, with the witnesses', solicitors', and Magistrates' Clerk's office to the rear. The public entrance to the Borough Court will be from the intended road, and that for the magistrates by the principal entrance in Queen-street. In the court a gallery is to be erected for the use of the public. The Town-hall is to be on this floor at the south-west corner facing Albion-street and the intended road, 90 ft. long, 46 ft. wide, and 36 ft. high, entered through the central hall direct from the main entrance in Queen-street, and with two additional entrances from Albion-street. At the northern end will be an orchestra the full width of the room, under which are to be the retiring-rooms for the performers; at the opposite end will be a large gallery, with a balcony on each side, having tip-up seats fixed in position, the total accommodation being for 1,200 persons seated. The second floor is to be approached from the main staircase in the centre of the building, and will have a large waiting-hall or gallery giving access to all the rooms on this floor. At the south-east corner of Queen-street will be the banquetting or reception room, with a small committee or serving room attached. At the opposite, or north-east, corner there will be the Council-chamber, with Councillors' ante-room and retiring-room and Mayor's parlour, with waiting-room and large committee-room, the latter being connected with the banquetting-room by folding doors. The lower ground-floor will be about level with the south-east corner, next Queen-street, the ground being excavated from front to back with large areas for light. The following rooms are being provided for the different departments, viz.:—Offices for the payment of rates, water inspector and sanitary inspector, with meter and sample rooms, weights and measures and reading-room. The police department is to the north at the upper end of Wellington-street, and immediately under the magisterial portion on the floor above. It will have a separate entrance from the street to the charge-room, inspectors' and superintendents' rooms, day or parade room, cleaning, lamp, and store-rooms, and to the cells. These are eight in number, one being an association cell, and are all placed in the interior of the building. A doorway from the prisoners' corridor will lead to an area which will serve as an airing and exercise ground. At the north-west corner will be the caretaker's house, consisting of kitchen, two bedrooms, pantry, &c. Underneath a portion of the large hall, next to Albion-street, will be the minor hall, to seat 600 persons, 70 ft. long, 46 ft. wide, and 16 ft. high, with a platform at one end, connected with the performers' retiring-rooms before mentioned. A general kitchen will be provided, with scullery attached, constructed in the roof, on the south side. It is proposed to heat the large rooms by hot water on the low pressure system, and the offices with open fireplaces. The whole of the ashlar used in the building is to be from the Morley Quarries, all lined with brickwork throughout. The designs

from which the building is being erected were prepared by Messrs. Holtom & Fox, of Dewsbury, and were selected from a number of competitive designs sent in. The contractors, and the amounts of their contracts, are as follow: — Masonry, Messrs. J. Schofield, Sons, & Co., Leeds, 12,456*l.*; plumbing, Mr. Thomas Storey, 890*l.*; joiners' work, Messrs. James Clegg & Son, 3,084*l.*; plastering, S. Johnson & Son, Mirfield, 1,060*l.*; ironwork, Messrs. Firth & Clay, Dewsbury, 348*l.*; slating, Messrs. J. Atkinson & Sons, Leeds, 288*l.* Mr. Henry Clarke is clerk of the works.

Restoration of Gulval Church, Cornwall.—Gulval Church, near Penzance, was re-opened on the 10th inst., after undergoing restoration, by the Lord Bishop of Truro (Dr. Gott). The parish church of Gulval, says the *Western Morning News*, was one of the cruciform Cornish churches built in the early part of the fourteenth century, and apparently remained intact for two centuries, and then extensive alterations were made. The south transept and south aisle were then removed, and the quaint old tower erected. Further renovation became necessary about thirty-five years ago, and the church was re-seated, the aisles running parallel, and the end granite windows were erected. Since then the only alterations have been the replacing of a two-light window in the east end of the chancel by one of five lights, and filled with stained glass. About two years ago, however, a great quantity of the ceiling of the church fell away, and Mr. J. Piers St. Aubyn, of Marazion, was requested to examine the roof and prepare a report. The examination showed that the timbers supporting the roof had become rotten, and there was a danger of some portion of the roof collapsing, whereupon it was decided to construct a new roof, and generally to effect a thorough renovation. A new transept on the north side of the nave, to be known as the Bolitho Chapel, has been built. The transept has a four-light window in the north gable, filled with stained glass by Messrs. Heaton, Butler, & Bayne. Under the window an alabaster arcading has been constructed. In addition to the transept, the north chancel aisle and the north-west aisle have been built, the former for use as a clergy vestry and to contain the enlarged organ. The chancel has been fitted with oak stalls and paved with polished Plymouth marble. The benching of the chapel is of carved oak. The paving outside the benching is of Plymouth marble, and on the east the chancel is divided from the organ-chamber by a glazed screen of oak. The transept is fitted with pitch-pine benching, and the gangways paved with red tiles. The north-west aisle contains a four-light window, in memory of Mr. T. S. Bolitho, and all the memorial windows, which occupied various positions in the north wall of the church, have been rebuilt in the new north wall. The work has been carried out by Messrs. Carah & Edwards, of Praze; the alabaster work by Mr. Earpe, of London; the marble pavement by Messrs. Goad & Co., of Plymouth; the ironwork by Messrs. Holman & Son, of Penzance; the glazing and readjusting of the old stained glass by Fouracre & Son, of Stonehouse; and the plumbing work by the late Mr. J. Mowatt, of Penzance; the whole being superintended by Mr. J. Piers St. Aubyn, the architect.

New Church, Hull.—The new Church of St. Augustine's, situate in Queen's-road, Newland, Hull, was opened by the Bishop of Beverley on the 10th inst. The architect is Mr. G. Gilbert Scott, and the edifice consists of one wide nave and one aisle. It is in the Late Decorated style, built of brick, with stone facings, and the interior arches of red Hollington stone. The interior roof is of pine. A special chamber and gallery are constructed for the organ on the north side of the church. The tower contains a gallery, with chambers for bells. The seats are of pitch-pine.

New College Buildings, Bristol.—The New Medical School of the Bristol University College, which has been for the past year in process of construction, was, says the *Bristol Times and Mirror*, opened for classes on the 4th inst. The old buildings, designed for a temporary purpose, have long been felt inadequate. The new building, which is part of the future grand front, is erected in local red Pennant stone, with dressings and mouldings of Coombe Down freestone. Entering from the main road, under a deeply-moulded arch, a lobby is passed, conducting into a large hall, whence access is gained to the various departments. The medical museum, on the right, is 50 ft. by 30 ft. There are also rooms for the faculty meetings, medical tutors, students, &c., together with cloak-rooms, there being access by a glazed covered way to the old Medical School, the interior of which has been modified and renovated. From the hall, which is floored with mosaic, rises a wooden staircase, leading to the first floor, on which are a physiology theatre for about fifty students; a large laboratory; a professors' preparation-room; and a library 50 ft. by 30 ft., lighted on three sides by traceried windows of leaded glass, and having a Gothic open-timbered roof, with hammer-beam principals. The scheme has been completed under the superintendence of Mr. F. Bligh Bond, architect, of Bristol; and Mr. George Humphreys, of Bristol, was the contractor. The buildings have been warmed by Messrs. Crispin & Son, engineers, of Bristol. The ornamental lead glazing was supplied by Messrs. Moon & Son, and that of the large staircase lights by Messrs. Bell & Son, both of Bristol. The carving has been done by Messrs. Davey & Bushell. The engineering wing will probably be complete early next spring. The ground floor gives a workshop and casting-shop of about 70 ft. by 34 ft., with a boiler-house in connexion with the same. Above will be two floors, the first devoted to engineering lecture-rooms, and the second will provide a series of drawing and class rooms. The cost of the completed buildings will be about 4,000*l.* The building, when finished, will form the south side of the future great quadrangle, which is designed to lie back from the road front. The existing L-shaped portions of the University building will therefore form the north and east sides of the quadrangle. The architect for this section is also Mr. F. Bligh Bond; the contractor is Mr. William Church, of Bristol.

FOREIGN AND COLONIAL.

France.—According to the proposals of the Section of Architecture, the Académie des Beaux-Arts decided last week that the prize founded by M. Bailly, the much-regretted President of the Society of French Artists, should be awarded to a French artist for a completed building, or to a French author for a work on architecture. The prize will be given according to the following rules: Twice consecutively for a completed building, the third time for a publication. The prize will be given for the first time to the architect of the best building erected during the last six years.——The landscape painter Gosselin, curator of the Museum at Versailles, is very seriously ill.——The Jury of the École des Beaux-Arts has awarded the medals for 1892 as follows: — Painting, M. Mitrecey; Sculpture, M. Rispal; Architecture, M. Deperthes. This same pupil has also obtained the Prix Abel Blouet. The Prix Jay has been bestowed on M. Chanut. We may also mention that out of the 971 young people admitted to the School course 501 are architects.——Fifty competitors have taken part in the open competition for the decoration of the Salons d'Introduction of the Salle des Fêtes at the Hôtel de Ville. The designs, which are on view at the Palais des Beaux-Arts, will be judged this week. The sum allowed for each Salon is 60,000 francs.——M. Dalou has just been definitely commissioned to execute the monument to be raised by public subscription to Alphand. This monument, which is to be erected in the Square of St. Jacque la Boucherie, close to the Boulevard Sébastopol, consists of a semi-circular erection, with an interior decoration of bas-reliefs, representing works directed by the eminent engineer. In the centre is the statue of Alphand on a pedestal, and surrounded by workers, to whom Alphand gives orders.——To-morrow, October 30, the official inauguration of the new Pont de Conflans will take place. The bridge, which was begun two years ago, unites the Communes of Charenton-le-Pont and Ivry-sur-Seine.——The old church of Bougival, which has been almost in ruins, is now being demolished. The old clock is to be preserved and restored; the new church will cost 700,000 francs.——Some workmen have just discovered at Guise (Aisne) the foundations of a Roman city dating from the first century of the Christian era; they have also found the remains of some wall-paintings, some shaped flints, and a hatchet. These curious remains prove without doubt that the old city occupied the site of what is now the Rue Camille Desmoulins.——A statue has just been erected to Pagnier, the Maréchal des logis of the 12th regiment, who was the first French soldier killed at the commencement of the war of 1870-1871. The monument is in the cemetery of Niederbronn.——In the court of the Police station at Angers, a sarcophagus has been discovered, containing the body of a Bishop, in his robes, with a paten in gilt copper, of the thirteenth century, by his side, a gold episcopal ring with a blue stone, and a finely-carved cross. From certain documents found at the Bishop's Palace, where the bones have been taken, this tomb appears to have been that of Michel Atavis Villoiseau, Bishop of Angers, who died in 1260, and was buried in the choir of the chapel of the Jacobins, which he had built, and where now stands the Gendarmerie. The different objects found have been placed in the Museum of St. Jean at Angers.——On November 12 the new hospital for scrofula will be opened. It has been built by the Administration of Civil Hospitals at Lyons on the (almost) island of Giens, near Hyères.——The Municipal Council of Rochefort have just decided to construct large barracks for the Infantry on the plateau of Sainte Sophie, near the town.——A magnificent tomb has just been inaugurated at Saint Geniez (Aveyron) in memory of Madame Paulin Talabot, a former director of the railways of Paris, Lyons, and the Mediterranean. This monument has been made from the designs of MM. Lucien Magne Ernest Barrias, and Puech. The monument is 13 mètres high, and forms an open loggia, the dome of which is supported by four massive columns, under which is the statue of Madame Talabot draped in a mantle and kneeling in prayer. In the angles are represented the four principal scenes in the Passion. The monument has been entirely made in Paris, and has cost 150,000 francs. Twelve wagons were employed to convey the enormous mass of stone and marble.——The death is announced, at Tours, of M. Alfred Didier, historical painter. He was born at Paris in 1840; was a pupil of M. F. Barrias. We may mention amongst his principal works the following: —"The Interview of Mdlle. de Sombreuil and General Hoche" (1866), "Théroigne de Méricourt" (1869), "Death of Bayard" (1879), "Victory at Wissembourg by General Hoche" (1887), &c.——M. Charles Eugène Chatigné has just died at Dijon, at the age of sixty-eight. He was a very fine miniature painter.——The Service des Beaux-Arts of the Ville de Paris is now restoring the famous "Chevaux de Marly" which stand at the entrance to the Champs Élysées. In order to preserve these specimens of eighteenth-century art, it is still a question whether they shall not be removed to a museum and replaced by bronze casts.——We hear of the death of M. Emile Pouget, Paris, architect, member of the Société Centrale des Architects. M. Pouget was only forty-eight.

Vienna.—Messrs. Fellner & Helmer have been commissioned by the Municipality of Wiesbaden to build a new theatre in that city. According to contract, the theatre is to seat 1,400 persons, and is not to cost more than 1,590,000 marks (79,500*l.*). If the work can be commenced during the present month, the architects promise that the structure shall be ready in September, 1894.

Berlin.—The Emperor, on his return journey from Vienna, stopped at Wittenberg to inspect the historical Lutheran church (Die Schlosskirche), which has been restored by his command. Professor F. Adler, the eminent archæologist, who had acted as architect on behalf of the Prussian Board of Works, was in attendance, together with the master-workmen employed on the building.——There is to be a monument erected in memory of the late Empress Augusta, who had given much time to the charitable institutions of the capital. A limited competition for the design will be opened. Five eminent sculptors have been invited to send in models.——Herr Dr. Zelle has been made chief "Bürgermeister" of Berlin, the Emperor signifying his approval to this election. In Dr. Zelle architecture as an art will find a friend, and there will probably be a new *régime* in the Municipal Board of Works.——A new building for the Royal College of Music is to be put up by Herr "Baurath" Schwechten in the Potsdamer-street, but at a considerable distance behind the street frontage line.——Professor J. Lessing, the curator of the Arts and Science Museum, has read an important paper on the design of modern German furniture.——The electric lighting in the main thoroughfares of Berlin is to be greatly increased next year. The electric light will also be used on the "Schlossfreiheit" in front of the Royal Palace. —— "Gardens, Fountains, and Monuments" will be the subject of a series of lectures by Dr. J. Springer at the "Kunstgewerbe" Museum. The subject has not been systematically treated before in Berlin, and the lectures are expected to excite some interest.

MISCELLANEOUS.

Glasgow Institute of Architects.—On the 18th inst. the annual meeting was held in the Religious Institution Rooms, Glasgow, Mr. William Leiper, A.R.S.A., presiding. The twenty-fourth annual report showed that there were forty-nine ordinary and seven honorary members in the Institute. Great interest was shown by the Institute during the session in the preparation by the Corporation of a Building Act for Glasgow. The Bill had now become law, but it was gratifying to be able to report that various clauses which had been objected to by the Institute had been deleted or modified. Mr. T. L. Watson said that any action they had taken in the past had been taken only with the view of ensuring good building.

The Mason College Engineering Society, Birmingham.—The opening meeting of this College for session 1892-93 was held in Mason College, Birmingham, on the 19th inst., when Prof. Robert H. Smith delivered a presidential address on "Technical Education; its Use and Abuse: What it can do and what it cannot do." Prof. Smith divided the whole of education into three stages,—1, preliminary and general; 2, special, *i.e.*, professional or technical; and, 3, the subsequent training received through the experience of practical work and life. The third stage was the most important, not only as being longer and more difficult, but also as affording wider opportunities. He next insisted strongly on making the initial stage liberal and general in character, and of continuing it until the age of at least thirteen for relatively poor boys and girls, and to from fifteen to eighteen for those better off. He complained of what he characterised as the one-sided nature of the teaching of the present school system, and said that it required development not only on the Natural Science side, but also in the direction of training in skilled natural labour. He did not much care what kind of labour was employed as the means of this

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premium.	Designs to be delivered.
Local Board Offices	Crompton Local Board	40*l.* 20*l.*	Nov. 1
Town Hall	Walsall Corporation	100, 75, & 50 Guineas	Nov. 12
Technical Schools, Swindon	Swindon New Town & Old Swindon Loc. Bd.	.....	No date
School Buildings	Gateshead School Bd.	.....	do.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Making-up Roads	Tottenham Local Bd.	J. E. Worth	Nov. 1
Large Glasshouse, Abbey Park	Leicester Corp.	E. G. Mawbey	do.
Four Houses, Llanbradach, Glam.	Mr. Llewellyn	.....	do.
School Buildings, Willington, Durham	Willington Sch. Bd.	Wm. Fox	do.
Additions to Residence, Green-street, Rothes, N.B.	Mrs. Cruickshank	.....	do.
Flint Road Metal (3,000 cubic yards)	Hove Commrs.	*Official*	Nov. 2
Stable (170 horses), &c.	Bristol U.S.A.	F. Ashmead	do.
House and Workshop, Holmfield, Halifax	.....	Petty & Ives	do.
Public Library, Harlesden	Willesden Public Library Commrs.	J. Cash	do.
Public Library, Willesden Green	do.	Newman & Newman	do.
Sewerage Works, West Derby, Liverpool	Walton-on-the-Hill Local Board	S. Middlebrook	do.
Station Buildings, Knaresborough, &c.	N. E. Ry. Co.	Wm. Bell	do.
Surface Drainage (1,000 ft.)	Newbury Corporation	F. A. Stickland	do.
*Supply of Materials	Ealing Local Board	C. Jones	Nov. 3
*Granite Kerb Pitchers	Borough of Brighton	F. J. C. May	do.
Four Semi-detached Villas, Halifax	.....	Horsfall & Williams	do.
Extension and Work at Cricket Ground	Alnwick Cricket Club	.....	do.
Materials, &c.	Stockport Corporation	J. Atkinson	do.
Alterations and Additions, Technical School	do.	do.	do.
Railway Construction (12,896 metres), Hautefort to Condat	Dordogne Prefecture	*Official*	do.
*Alterations, Sheffield Station; Four Cottages, Geddington, near Kettering	M. Ry. Co.	do.	Nov. 4
*Tar Paving Works, Eastern Hospital	Met. Asylums Board	A. & C. Harston	do.
Road Works, Dovercourt	Harwich Local Board	H. Ditcham	do.
Roadmaking, near Manchester	Denton and Houghton Local Board	G. H. Newton	Nov. 5
Additions, &c. to Rectory, St. Endelhon, Wadebridge	Rev. R. H. Treffry	W. T. Martyn Mear	do.
Additions to School Buildings, Gunnislake, Devon	Calstock School Board	*Official*	do.
Granite Road Metal (500 tons)	Bishop Stortford L. B.	do.	do.
Waterworks	Carlow Town Council	do.	Nov. 7
*New School Buildings and Alterations	Aldershot School Bd.	S. Stapley	do.
*Making-up Roads	Finchley Local Board	F. Smythe	do.
*Works and Materials	East Barnet Valley Local Board	G. W. Brumell	Nov. 8

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Asphalte Paving	Southwark Vestry	*Official*	Nov. 8
Kerbing, Channelling, &c.	Droitwich Corp.	B. Godfrey	do.
*Paving Footpaths	Colwyn Bay & Colwyn Local Board	W. Jones	do.
Sewering, Paving, &c.	Middleton Corp.	W. Welburn	Nov. 9
Road Works	Poole Town Council	J. Elford	Nov. 10
Waterworks, Castletownbere, Ireland	Castletown Union	R. Evans	do.
Steel Vignoles Rails (688 tons)	Antwerp Government Authorities	*Official*	Nov. 14
*Technical School, Library, &c.	Darwen Corporation	J. Lane-Fox	do.
*Head Master's House	Governors of Seckford Hospital and Woodbridge School	F. Chancellor	Nov. 17
Iron Work, &c.	Bombay, Baroda, and Central India Ry. Co.	*Official*	Nov. 23
Hydraulic Works, Grain Warehouses, &c.	Bulgarian Government	do.	Dec. 2
Bourgas	Spanish Government	do.	Jan. 2493
Dry Docks, Cadiz and Carthagena	Colombo Municipality	do.	Jan. 31
Tramway Construction, Colombo, Ceylon	North Dissington Township	do.	No date
Whinstone Road Metal, near Newcastle	Manchester Corp.	do.	do.
Kerb Settings	Belgian State Railways	do.	do.
Iron Turn-tables, &c.	Alsace-Lorraine Imperial Railways	do.	do.
Iron Superstructure for Three Bridges	.....	C. H. Thornton	do.
Four Through Houses, Woodhouse Moor, Leeds	H. Mitchell	T. Butler Wilson	do.
Additions, &c. Duchy House, Harrogate	C. Elgie	do.	do.
Stable, Coachhouse, Conservatory, &c. Harrogate	Moore Brothers	A. C. Bothams	do.
Boot Factory, Salisbury	.....	J. Harvey	do.
Stable and Coachhouse, Plymouth	.....	J. Ingman & Shaw	do.
Enlarging Schools, Great Houghton, Northampton	Johnson & Wright	E. Law	do.
Alterations, Business Premises, Goldstreet, Northampton	Ed. Knox	.....	do.
Roadmaking, Aberavon	Union Authorities	G. A. Kerrick Walker	do.
Alterations, &c. Workhouse, Chester-le-Street			

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Two Assistant Sanitary Inspectors	Wandsworth B. of W.	200*l.* &c.	Nov. 14
Surveyor, Gower Highway District	Glamorgan C. C.	150*l.*	do.
*Assistant Borough Surveyor	Aberdeen Town Coun.	250*l.*	Nov. 21
*Borough Engineer and Surveyor	Birkenhead Corp.	500*l.* &c.	Nov. 23
Engineer	Rangoon Port Trust	1,000 rupees per month	Jan 236
Borough Engineer's Assistant	Soutnampton Corp.	3*l.* 3*s.* per week	No date

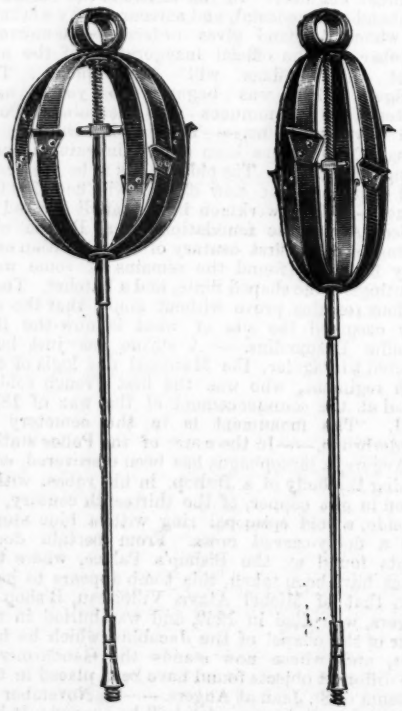
Those marked with an Asterisk (*) are advertised in this Number. *Contracts, pp.* iv., vi., & viii. *Public Appointments, p.* xviii. & xix.

training; but he insisted that it was a viciously narrow and illiberal training that made no effort to cultivate among all classes an intelligent comprehension of, and sympathy and respect for, what must remain the life-work of the vast bulk of mankind. The object of such teaching of manual work was distinctly liberal, and it should be counted quite as needful a part of general education as the literary, mathematical, scientific, and artistic portions of the curriculum. In the subsequent technical teaching he referred chiefly to what was needed by the artisan population; and repudiated the claim to be called technical schools of those where nothing but science and vague generalities regarding the application of science to industry were taught. The detailed study of the materials, appliances, and methods of one or other set of industries was the proper object of a technical school, and this study should be as scientific as the contemporary development of science permitted; but it must leave Science behind wherever Science has not followed the actual advances made by industry. Many faculties necessary for success in industry could be gained only by training in works, but a great deal of the skill and knowledge necessary for the conduct of industry can be obtained in a well-managed school. Such a school may do useful work under certain conditions and certain limitations,—namely, its teachers must have, in works, obtained a thorough first-hand knowledge of what they teach, and must also be men of first-class general and scientific education: secondly, a sufficient time must be allowed for the influence of the school to work on each individual student; thirdly, the school must be materially well equipped. The unavoidable limitations referred to this third condition, because schools would never be furnished with large-sized apparatus, nor apparatus to deal with large masses of material, while the properties and actions of large masses and large machines were often very different from those of small masses and machines.

Furness Abbey said to be in Danger.—According to the *Kendal Mercury*, the ruins of Furness Abbey are in a bad way. The heavy rains and a stream which runs close by have made their way to the foundations, with the result that part of the north and south transepts and chancel have become somewhat dangerous, and workmen are now employed in placing strong tie-rods and braces in order to keep the walls together. Some months ago all the ivy was stripped off the walls, and the tops were carefully sealed with cement to prevent the rain getting in.

Helliwell's Patent Glazing.—We are asked to mention that the business in patent glazing and zinc roofing hitherto carried on by the late Mr. Helliwell will be continued as usual, under the style or title of "Helliwell & Co.," by the acting executors, Mr. J. Boosie and Mr. W. Kemp, both of whom were associated with the late Mr. Helliwell in the conduct of the business for many years.

A new Chimney-cleaner.—Messrs. W. & G. Ashford, of Birmingham, send us the accompanying illustration of a steel scraper which they have patented, for cleaning the insides of flues, drains, &c. As will be seen from the illustration, it consists of a system of jointed steel bars on the head of a rod, which can be adjusted by a screw so as to enlarge or collapse to fit the size of the flue or pipe to be cleaned. It is claimed that this will remove caked soot, &c., which the ordinary brush will not touch.



East Riding Antiquarian Society. — An inaugural meeting, for the purpose of establishing an East Riding Antiquarian Society, was held on the 19th inst., in the Council Chamber of the Hull Town-hall, Dr. J. Charles Cox, LL.D., F.S.A., presiding. The Chairman said an antiquarian society, well organised, could do effectual work through their council. Through the means of their operations, they might be able to ensure careful restoration and the prevention of acts of vandalism which might otherwise be perpetrated. The Bishop of Beverley moved:—"That a society be formed, having for its object the study and preservation of antiquities and popularising the archæology of the East Riding." Alderman Park seconded the resolution. It was decided, on the motion of Col. Haworth-Booth, that the society should be termed "The East Riding Antiquarian Society," and other detail arrangements having been made, Dr. Cox was elected to the position of President.

Lift at the New Travellers' Club.—Messrs. Archibald Smith & Stevens ask us to say that the passenger lift at the New Travellers' Club, mentioned in our issue of the 15th inst., was erected by them, in addition to other lifts in the same building.

Plumbers' Classes at Newcastle-on-Tyne.—Sir John B. Monckton, Town Clerk of London, recently distributed the prizes and certificates of merit granted by the Worshipful Company of Plumbers, London, to the students in the plumbing classes at the Durham College of Science, Newcastle.

Castleton Sewage Scheme.—The Chairman of the Castleton Local Board visited London on the 23rd ult., accompanied by the Clerk and the Engineer, to submit to the Local Government Board plans of the proposed sewage scheme for the district. The proposal is to convey the sewage of one part of the district to a site near the canal at Trub Smithy, and that of the other part of the district to some site to be secured at Sudden; the sewage to be treated at each outfall. Plans of the sewage purification works have been prepared by Mr. Diggle, Borough Engineer to the Corporation of Heywood, and are designed for carrying out the International Process of purification by means of ferrozone and filtration through polarite beds.

Memorial to Bishop Lightfoot, Durham.—On the 20th inst. the cenotaph which forms the first part of the memorial to the late Bishop Lightfoot, was unveiled in Durham Cathedral. The memorial is placed on the north side of the choir of the cathedral, under the screen dividing the choir from the north aisle. This screen has had its central portion removed, and an arch of cusped woodwork formed in it to carry the upper portion, with its cresting and pinnacles. The monument is in the style of the fifteenth century, composed of alabaster, with richly-moulded base, string, and cornice of a dark grey marble. The lower portion, of the tomb has a band of small cusped openings, with alternate shields and flowers worked in the alabaster, while above the marble string are large panels of alabaster, three in each side and one at each end, all filled with richly-moulded and cusped quatrefoils bearing shields charged with the arms of the

diocese of Durham, Lightfoot, and Durham and Lightfoot impaled. The marble cornice has, in brass, let into it an inscription. Above the cornice is laid the effigy, in white marble, of the late Bishop, who is represented in the episcopal robes, the hands folded over the breast, the feet resting against three books. The model for the effigy was made by the late Sir Edgar Boehm, Bart., and was nearly completed at the time of his sudden death, after which the work was taken up by Mr. Alfred Gilbert, A.R.A. The altar tomb has been made by Messrs. Farmer & Brindley, of London, from the design of the Cathedral architect, Mr. C. Hodgson Fowler, F.S.A.

CAPITAL AND LABOUR.

United Builders' Labourers' Union.—Mr. W. Stevenson, the General Secretary of this Union, has issued a circular to builders, &c., in the London Distict reminding them that the new working rules and increase of pay agreed to by conference between the master builders and the representatives of the trades come into force in the first week in November. The principal rules are as follow:—1. That the working hours in summer shall be 50 per week. 2. That during fourteen weeks of winter, commencing on the first Monday in November, first three weeks, 8½ hours per day; eight middle weeks, 8 hours per day; three following weeks, 8½ hours per day; commencing work at 7 a.m., terminating at 4.30 p.m., and 12 noon Saturdays, first three and last three weeks; eight middle weeks 7 a.m. to 4 p.m. 3. That the present rate of wages for labourers shall be advanced ½d. per hour. 4. That employers shall give one hour's notice or pay one hour's time on terminating an engagement; all wages due shall be paid at the expiration of such notice; walking time to be allowed if sent to yard. 5. That the term London District shall mean twelve miles radius from Charing Cross. The present rates are—ordinary labourers, 6d. per hour; scaffolders and hoisters, 6½d., timbermen, 7d.; the new rates will be 6½d., 7d., and 7½d. per hour respectively.

MEETINGS.

Tuesday, November 1.

British Museum.—Miss Emily Penrose on "Greek Vases in the British Museum: Signed vases." III. 2.45 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. T. De Courcy Meade on "Scavenging: Disposal of Refuse." 8 p.m.

Society of Biblical Archæology.—8 p.m.

Glasgow Architectural Association. — Mr. Wilson Beaton on "Glasgow Cathedral." 8 p.m.

Wednesday, November 2.

Royal Archæological Institute.—Three papers will be read. 4 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting. 8.30 p.m.

Friday, November 4.

Architectural Association.—Mr. W. Young on "The Application of an Architectural Education." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Professor A. Wynter Blyth on "Diseases of Animals in relation to Meat Supply; Characteristics of Vegetables, Fish, &c., unfit for Food." 8 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

14,655.—Saws: *W. W. Horn*.—This invention relates to an improved saw-setting and filing device, and consists of an apparatus having suitable jaws for holding and guiding the saw,—hinged adjustable guides projecting above the saw and slides mounted in the said guides, the slides carrying files on other sharpening tools. The slides are caused to reciprocate in a horizontal plane by means of connecting rods attached to cranks from the driving shaft of the machine. The files are pressed down by springs during their forward motion, and raised by a suitable cam as the slides recede, and are adjusted by means of screws to regulate the position of the files to the teeth of the saw. After the file has operated upon the tooth, the saw is advanced by an arrangement of a pawl, crank arm, and cam mechanism, the space of a single tooth, so that the adjacent tooth is sharpened by the next stroke of the file, the throw of the pawl being adjustable so as to control the forward movement of the saw. As the teeth recede from the filing portion of the machine they pass between setting-blocks having inclined opposing faces, the setting-pins therein having bevelled ends adapted to engage the teeth of the saw when they stand opposite to the pins. The setting-pins are operated by an arrangement of levers, which are also adapted so that the setting of the teeth and the filing proceed simultaneously, the saw being released from both at the same time.

16,711.—Stoves: *T. P. Lomas and H. E. Lomas*.—This is an improved form of stove, and consists of a gas, paraffin, or other burner capable of being regulated in the usual manner. Above and surrounding this burner are fitted a series of polygonic rings formed of sheet metal, porcelain, or other suitable material. Each of the rings may be formed of one piece or more fixed together, and circular, ecliptical, or otherwise in plan. The inventors cut sheet metal, copper, tin, or other metallic plates, and shear, press, stamp, and corrugate such plates, so as to approximate to the form of portions of cylinders, or portions of a frustrum of a cone, or the plates are formed of other materials, and unite the same by means of flanges, or otherwise, so as to form the rings above-mentioned. When these rings are suitably mounted above the stove they form a series of louvres, permitting cold air to freely enter and ascend, and also permitting rays of light to be visible between the rings, whereby a cheerful glow is thrown downwards and outwards. At the same time air is warmed and carried upwards through the stove.

18,504.—Drainage: *M. Nadiein and Others*.—This invention relates to means or apparatus for the treatment of fæcal and sewage matter, and enables waste on sewage matter, such as the solid and liquid matter from water-closets and urinals, as well as the water from sinks, laundries, bath-rooms, and the like to be received in a common pipe, which conducts them to an apparatus fully described in the specification, where the solid matter, being automatically separated from the liquid matter, is disinfected or treated for the manufacture of manure.

6,947.—Hinges: *A. G. Brookes*.—This invention has for its object to construct a three-part hinge adapted for tripods and analogous uses, or in instances where it is desired to connect three parts together, and to provide for the independent movement of each. A pintle is provided, which receives upon it in any usual manner two leaves, these being freely revoluble on the pintle, and another pintle is provided, which may be connected with the first-named pintle rigidly if desired, and, if so, the pintles may be formed in a single piece. The last-named pintle is adapted to receive upon it the third leaf, which is also freely revoluble. The last-named pintle is so arranged with relation to the first pintle that the leaves thereon may be turned on an axis at right angles to the axis of the first-named pintle, and may also be turned on the axis of the first-named pintle as desired.

8,040.—Windows: *G. Meager*.—This specification describes improvements in the construction of sashes and frames to facilitate the cleaning of the windows without incurring the risk of sitting or standing outside on the sill. The sashes are hung with hinges to slips of hard wood. These slips are hung with pulleys and lines in the usual way, and secured to the sashes and frame with beads, which are grooved and tongued into the stiles of the sashes, thus preventing the sashes from shifting out of place, and thereby can be opened into the room as an ordinary casement window. At the same time the sashes can be run up and down as ordinary running sashes. The sashes can be fitted to hang folding as a pair of casements, or in one casement, and when closed to show as casements or as double hung sashes. They can also be hung to the slips with three-leafed butts, so as to open either inside or outside.

NEW APPLICATIONS FOR LETTERS PATENT.

October 10.—18,012, C. Coe, Water Taps.—18,042, J. Peebles, Self-locking Window-sash Fastener.—18,044, H. Haynes, Handle Catch for Casework Doors, Cupboard Doors, &c.—18,045, J. Parker, Manufacturing Joinery, &c.—18,048, J. Parker, Manufacture of Mantels from Metal, Stone, Slate, &c.—18,057, J. Ryder, Machinery for Preparing Clay in the Manufacture of Bricks.

October 11.—18,114, T. Coulthard, jun., and R. Cottam, Door-locks having a Combined Night Latch and Bolt—18,119, S. Salzberger and J. Reindl, Butthinges.—18,145, T. Jones, Plaster for Building Purposes.—18,178, J. and W. Wade and H Wallace, Decorating Tiles.—18,180, H. Piron, Ventilating Stoves.

October 12.—18,224, J. Drummond, Embossing Wooden Panels.—18,255, W. Crow and S. Lehmon, Gullies and Drains.—18,260, N. Donovan and T. Myers, Setting Circular, Band, and Hand Saws.

October 13.—18,298, M. Adams, Water-closets.—18,302, P. Hoole and F. Druce, Stoves, Ranges, and other Fireplaces.—18,303, J. Morrey, Window-sash Fastener.—18,346, H. Standage and C. Smith, Pigments.—18,348, T. Cuthbert, Wood Flooring and Pavements.

October 14.—18,447, S. Payne, Sash-fasteners.—18,454, J. Sears, Chimney Cowl or Exhaust Ventilator.—18,455, J. Sears, Roof Ventilating.—18,456 J. Sears, Increasing Draught to Fireplaces and Ventilating Rooms.

October 15.—18,477, J. Clark, Flushing Apparatus by Compressed Air for Water-closets, &c. — 18,485, B. Phillipson, Drain-pipes and Drainage Appliances.

PROVISIONAL SPECIFICATIONS ACCEPTED.

14,218, W. Dick, Gas-pipes.—16,479, J. Keal, Flushing Out Water-closets flushed with Waste-water.—16,619, Yates, Haywood, & Co., and the Rotherham Foundry Company, Limited, and Robert Henry, Adjustable Fire-grates.—16,633, T. Atherley, Siphon Cisterns.—16,703, W. McNeill, A combined Rule and Square.—16,717, J. Bloomfield, Plaster.—16,755, J. Bishop, Ventilating of Dwelling-houses and other Buildings, &c.—16,880, A. Mears, Planing or Shooting Mitres.—16,975, C. Robertson, Sash-fasteners.—16,99?, C. Harrison, Preventing the Bursting of Water-pipes by freezing.—17,046, C. Manchip and R. Foley, Roofing-tiles.—17,074, G. Law, Kerbstones.—17,154, W. Fasey, Hydraulic-jacks.—17.177, T. Banford, Hinges.—16,286, A. & H. Brentnall, Trellis-work and other wire or light iron-work.—12,271, R Bell, Heating, Ventilating, and Cooling Apartments, Buildings, &c.—17.384, L. Calman, Sash-fasteners.—17,685, T. Edgeworth, Wood-paving Blocks.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

21,613, P Walker, Ventilators.—22 036, W. Tucker, Anti-drip Sash-bar.—22,610, A. Gill and W. Gill, Paints and Lacquers.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 17.—By *Henry & Latchford*: 1 and 2, Bedford Nurserv, Clapham. f., 620*l*.—By *E. Wood*: "Keates Cottages," Esther-rd., Leytonstone, f.. r. 37*l*. 14s., 350*l*.: 47 and 49, Park-rd., Manor Pk., f., 400*l*., 25, Colvestoncres., Dalston. u.t. 64 yrs., g.r. 7*l*., r. 45*l*., 400*l*.; 210, Portland-rd., Norwood, u.t. 77 yrs., g.r. 5*l*., 260*l*.; two plots of f. building land, Heyworth-rd., Stratford, 80*l*

October 18.—By *Debenham, Tewson, & Co.*: 1 to 7, Earl's Pk.-ter., Tooting, f., r. 200*l*., 1,815*l*.; 139, 141, and 145, Camberwell-grove, Camberwell, u.t. 74 yrs., g.r. 24*l*., r. 116*l*., 850*l*.—By *Dowsett & Co.*: 236, 238, and 240, Dartford-rd., Dartford, f., 650*l*.—By *Wells & Read*: 40, Daleview-rd., Stamford-hill, u.t. 78 yrs., g.r. 5*l*. 10s., 165*l*.—By *Rutley, Son, & Vine*: 119, Walmer-rd., Nottinghill, u.t. 49 yrs., g.r. 8*l*., 300*l*.

October 19.—By *Osborn & Mercer*: "Hill House" and 6½ acres, Bramerton, Norfolk, f., 1,970*l*.—By *W. J. Newell*: 13 and 14, Gunning-st., Plumstead, u.t. 63 yrs., g.r. 5*l*. 10s., 430*l*.; 456 and 458, Woolwich-rd., Charlton, u.t. 48 yrs., g.r. 4*l*. 7s., r. 66*l*. 4s., 460*l*.; 1 to 4, Ivy-ter., Lewisham, u.t. 73 yrs., g.r. 20*l*., r. 132*l*. 12s., 670*l*.; 3, Stockwell-st., Greenwich, f., r. 45*l*., 620*l*.: f.g.r.'s of 22*l*., Burney-st., with reversion in 33 yrs., 580*l*.; 26, Burney-st., f., r. 30*l*., 560*l*.; 22, Woodland-st., u.t. 46 yrs., g.r. 3*l*., r. 19*l*. 10s., 125*l*.; 26, Walnut-Tree-rd., f., r. 19*l*. 10s., 260*l*.; 18, Walnut-Tree-rd., f., 435*l*.; 1, Station-villas, u.t. 78 yrs., g.r. 6*l*., r. 36*l*., 425*l*.—By *Turner, Rudge, & Co.*: "Mark Beech Farm," Hever, Kent, 30a. 2r. 3p., f., 1,400*l*.; "Hope Cottages, f., r. 11*l*. 1s., 155*l*.; f.g.r. of 10*l*., with reversion in 61 yrs., 290*l*.; f.g.r. of 1*l*. 6s., ditto in 63 yrs., 30*l*.—By *D. Young*: L.g.r. of 29*l*., Eastcote-st., &c., Stockwell, and Nos. 5, 7, 9, and 11, Crossford-st, u.t. 9 yrs., g.r. 23*l*. 12s. 9d., 175*l*.; 4, Lansdowne-gardens, u.t. 69 yrs., g.r. 3*l*., r. 36*l*., 335*l*.; 8 and 10, Lansdowne-gardens, u.t. 69 yrs., g.r. 12*l*., r. 72*l*., 725*l*.; 18, Sibella-rd., Clapham, u.t. 70 yrs., g.r. 8*l*. 10s., r. 50*l*., 480*l*.; 37 and 39, Hilldrop-cres, Holloway, u.t. 56 yrs., g.r. 16*l*., 900*l*.—By *Jones & Son*: 1 to 19 (odd), Florence-rd., and 41, Redcliffe-rd., Upton Pk., u.t. 92 yrs., g.r. 43*l*., 430*l*.—By *W. N. Willoughby*: The residence, "Ivy Lodge," Windsor, Berks, f., 1,000*l*.; "Kirkdale," Lansdowne-hill, Norwood, u.t. 90 yrs, g.r. 4*l*. 14s. 6d., 275*l*.

October 20.—By *T. G. Wharton*: Nos. 308 and 310, Gray's Inn-rd.; and 72, Acton-st., f., r. 395*l*., 7,500*l*.—By *F. J. Bisley & Sons*: 11 and 13, Cornbury-rd., Rotherhithe, u.t. 84 yrs., g.r. 10*l*., r. 52*l*., 310*l*.; 17 to 21 (odd), Cornbury-rd., u.t 84 yrs., g.r. 20*l*., r. 104*l*., 600*l*.; 34, Tranton-rd., Bermondsey, and 35 to 41 (odd), Keeton's-rd., u.t. 52 yrs., g.r. 12*l*., r. 157*l*. 6s., 1,530*l*.; 43 to 49 (odd), Keeton's-rd., u.t. 52 yrs., g.r. 12*l*., r. 115*l*. 14s., 1,180*l*.; 19 to 22, Martin-st., f., r. 104*l*., 1,360*l*.—By *Newbon & Co.*: 15, Highbury-grove, Highbury, f., 1,200*l*.; 54, Prince of Wales-rd., Kentish-town, u.t. 48 yrs., g.r. 5*l*. 5s., r. 61*l*. 2s., 400*l*.; 25, Parish-st., Horsleydown, f., r. 35*l*. 2s., 300*l*.; "The Limes," with stabling, Totteridge, Herts, f., r. 52*l*. 10s., 805*l*.; 94, Granville-rd., Kilburn, u.t. 88 yrs., g.r. 8*l*. 8s., 200*l*.; 3 to 8, Sunrow, Islington, u.t. 38 yrs., g.r. 26*l*. 15s., 535*l*.; 54, Prince of Wales-rd., Kentish-town, u.t. 38 yrs., g.r. 5*l*. 5s., 400*l*.—By *Stokes & Pinder*: 420, Edgware-rd.; and Nos. 123 and 125, Princess-st, u.t. 29 yrs., g.r. 40*l*., 1,010*l*.; 1 to 40, Christ Church Residences, Marylebone, u.t. 64 yrs., g.r. 60*l*., 4,005*l*.; 2 to 7, North Wharf-rd., Paddington, u.t. 29 yrs., g.r. nil, 1,155*l*.—By *H. J. Bliss & Sons*: 32, Groombridge-rd., Hackney, u.t. 70 yrs., g.r. 6*l*. 6s., 390*l*.; 4 to 7, Minto-pl., Bethnal-green, u.t. 27 yrs., g.r. 16*l*., 200*l*.; 1 to 6 and 11 to 15, Tuscan-st., and 11 to 14, Bonwell-st., with a g.r. of 80*l*. 10s., u.t. 56 yrs., g.r. 60*l*., 2,610*l*.; 1.g.r. of 30*l*., Coborn-st., Mile End, u.t. 24 yrs., g.r. 6*l*., 250*l*.: 37 and 39, Lichfield-rd., u.t. 51 yrs., g.r. 3*l*. 12s. 6d., r. 56*l*., 660*l*.—By *Boyton & Pegram*: 6, Melmouth-pl., Fulham, f., 690*l*.: 47, Barclay-rd., u.t. 75 yrs., g.r. 5*l*., 440*l*.

October 21.—By *T. B. Westacott*: "Holyrood House," Windmill-hill, Hampstead, and cottage, f., 2,100*l*.—By *Jones, Lang, & Co.*: 46, Lamont-rd., Chelsea, u.t. 73 yrs., g.r. 2*l*. 5s., r. 40*l*., 500*l*.; 13, St. Ann's-rd., Notting-hill, u.t. 58 yrs., g.r. 6*l*., r. 40*l*. 6s., 225*l*.; 7, Pentonville-rd., Islington, u.t. 24 yrs., g.r. 5*l*., 420*l*.; f.g.r. 13*l*. 13s., Georges-rd., Holloway, reversion in 24 yrs., 440*l*.: l.g.r. of 116*l*., Christie-rd., Hackney, u.t. 52 yrs., 2,135*l*.; l.g.r. of 30*l* 8s., Annis-rd., &c., u.t. 52 yrs., 565*l*.; l.g.r. of 26*l*., Cassland-rd., u.t. 52 yrs., 470*l*.; l.g r. of 16*l* 8s., Victoria-pk., u.t. 52 yrs., 315*l*.; l.g.r. of 84*l*., Cedar-rd., Fulham, u.t. 58 yrs., 1,465*l*.

[*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g r. for leasehold ground-rent; i.g.r. for improved ground-rent; g r. for ground-rent; r. for rent; f. for freehold; c. for copyhold: l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	9/0 0	0.0.0
Teak, R.I... load	9/10/0	15/0/0
Sequoia, U.S.ft.cu.	2/4	3/0
Ash, Canada load	2/10/0	4/0/0
Birch, do.	3/5/0	4/10/0
Elm, do.	3/10/0	4/15/0
Fir, Dantsic, &c.	1/10/0	3/10/0
Oak, do.	3/0/0	5/5/0
Canada.....	5/10/0	7/0/0
Pine, Canada red	2/10/0	3/15/0
Do, yellow	2/10/0	5/0/0
Lath, D'ntsic, fath	5/0/0	8/0/0
St. Petersburg	5/0 0	7/0 0
Deals, Finland		
2nd & 1st std 100	7/10/0	9/10,0
Do, 4th & 3rd ..	7/0/0	8/0/0
Do. Riga	6/10,0	8/0 0
St. Petersburg,		
1st yellow ..	10/10/0	14/10/0
Do. 2nd yellow	8/0/0	9/10/0
Do. white	7/0/0	9/10/0
Swedish	7/0/0	16/0/0
White 8es	8/0/0	17/0/0
Canada, Pine 1st	20/0/0	26/10/0
Do. do. 2nd....	14/10/0	16/0/0
Do. do. 3rd, &c.	7/10/0	10/0/0
Do. Spruce. 1st	8/10/0	11/0 0
Do. do. 3rd & 2nd.....	6'5/0	8/0/0
New Brunswick	6/10/0	7/0/0
Battens, all kinds	3/10/0	15 10 0
Flooring Boards, sq., 1 in. prep. 1st	0'8/0	0/13,0
Do. 2nd.....	0/7/0	0/10/0
Other qualities	0/3'0	0 7/6
Cedar, Cuba ..ft.	/3½	/4½
Honduras, &c.	/3½	/4
Mahogany, Cuba.	/4½	/6½
St. Domingo, cargo av	/4	2/0
Mexican do. do	/4	/5
Tobasco do. do	/5	/7
Honduras do..	/5	/6½
Box, Turkey ton	4/0/0	18/0/0
Rose, Rio.....	10/0/0	20/0/0
Bahia	9 0 0	18/0 0
Satin, St. Domingo ....ft.	0'0'7	0/1/3
Porto Rico	0/0/7	0/1/6

TIMBER (*continued*).		
Walnut, Italian..	0 0 3½	0'0/7
METALS.		
Iron—Pig, in Scotland .....ton	2/1/1½	0/0/0
Bar, Welsh, in London.....	5/17/6	6'0/0
Do. do. at works in Wales	5/7/6	5/10/0
Do. Staffordshire, in London	6'5/0	6'15.0
Copper—British, cake and ingot	49 0.0	49 10/0
Best selected ..	50/0/0	51.0/0
Sheets, strong..	58/0/0	0/0.0
Chili, bars	45/11/3	45/18·9
Yellow Metal lb.	0/0/5	0'0/5½
Lead—Pig, Spanish ....ton	10/3'0	10/7/6
English, com. brands	10/10/0	10/15'0
Sheet, English, 8 lbs. per sq. ft. and upwards ..	11/15/0	0 0 0
Pipe	12/5/0	0/0.0
Zinc—English sheet .....ton	22/15 0	0/0.0
Vieille Montagne	23/5/0	0 0.0
Tin—Straits	94/10/0	95/0/0
Australian	95/0/0	95 10'0
English Ingots..	98/10 0	99 0 0
Banca	93/0/0	96/5/0
Billiton	95/0/0	95/10/0
OILS.		
Linseed .....ton	18 7/6	0/0.0
Cocoanut, Cochin	24/10.0	0/0/0
Do. Ceylon	23/0/0	0'0'0
Palm, Lagos	24/0/0	0/0/0
Rapeseed, English pale	24/10/0	0/0/0
Do. brown	22/15/0	0/0/0
Cottonseed ref...	18/10.0	0/0.0
Oleine	20/10/0	21/0/0
Lubricating, U.S.	4/0/0	5/0/0
Do. refined	5/10/0	12/0/0
Tar—Stockholm barrel	0/17.6	0/18/6
Archangel	0/12/6	0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Thursdays.*]

BANSTEAD.—For the erection of two blocks of four cottages each, at Burgh Heath, Banstead, for Mr. Chas. Seall. Mr. F. J. Dibble, architect, Dorking:—

Robt. Peters, Banstead	£1,328 14 0

BIRKENHEAD.—For alterations and additions to music-hall. Mr. T. T. Rees, architect, 32, Hamilton-street, Birkenhead:—

Bradley, Pass, & Co.	£415 0 0	T. Downham	£256 6 6
J. Manning	372 0 0	MacLachlan & Batkin	249 13 0
W. Merrick	314 0 0	R. Robinson, Birkenhead*	239 0 0
T. Myers	289 0 0		
T. Hughes & Son	286 3 6		

* Accepted.

BLAIRGOWRIE, N.B.—For the extension of sewerage works, &c., for the Police Commissioners. Mr. Lake Falconer, Burgh Surveyor, 7, George-street, Blairgowrie. Quantities by Surveyor:—

Contract No. 1.—*Excavations, Supplying and Laying Pipes, &c.*

Hutchison & Martin	£651 7 1	D. & R. Taylor	£484 16 8
John Melicy	564 2 9	Mitchell & Band	484 7 6
James Bruce	495 0 0	William Low	473 15 6
William Hodge	490 12 6	James McKenzie	473 6 6
Geo. Mackay & Son	490 1 8	Bain & Co., Dundee*	405 11 0

* Accepted.

BURTON-ON-TRENT.—For the laying of about 630 lineal yards of pipe-sewer, Barton-under-Needwood, for the Rural Sanitary Authority. Mr. George Watson, surveyor, 38, Derby-road, Burton-on-Trent. Quantities supplied by the surveyor:—

Tomlinson	£225 0 0	Sharp, Barton-under-Needwood*	£179 19 0
Malabar	199 9 3		
Law	182 10 11		

* Accepted.

[Surveyor's estimate, £182. 10s.]

CARDIFF.—For the erection of Infectious Diseases Hospital, Canton, Cardiff, for the Cardiff Corporation. Mr. W. A. Harpur, Borough Engineer, architect:—

Stephens, Bastow, & Co.	£30,999	J. Haines	£27,997
D. J. Davies	29,999	C. J. Dunn	27,721
J. Strachan	29,177	H. Davies	25,870
Lathy & Co.	28,289	E. Turner & Sons, Cardiff*	24,858
J. Allan	28,198		

* Accepted.

CROYDON.—For the erection of stables and additions to house, Addiscombe-road, East Croydon, for Mr. Alderman Layton, J.P. Mr. G. Frisch, architect. Quantities by Mr. Arthur Keal:—

S. Page	£674 8	C. J. Saunders	£594 0
Bulled & Co.	596 0	M. Taylor (accepted)	588 0

EASTBOURNE.—Accepted for the erection of patent refuse destructor cells. Mr. C. Tomes, Borough Surveyor, Town-hall, Eastbourne:—

Manlove, Alliott, & Co., Nottingham	£392 0 0

EDMONTON.—For the construction of first portion of roads and sewers, Dysons-lane Estate, for the Edmonton Freehold Land and Building Society, Limited. Mr. Henry W. Dobb, Surveyor, 110, London-wall, E.C.:—

W. H. Wheeler	£685 10	Thos. Adams	£369 0
Parry	545 0	M. S. Kitteringham	365 0
John Neave	473 0	W. Nicholls	339 0
James Pocock	413 0	John Jackson	334 17
A. T. Catley	396 0	William Pavey	310 0
James Bloomfield	396 0	H. Drury	294 0
Geo. Bell	378 0	Surveyor's estimate, £400.	

ENFIELD.—For the construction of a 24-in. pipe outfall sewer, Ponder's End, for the Local Board. Mr. W. Kitteringham, Surveyor, Little Park, Enfield:—

Hipwell	£450 0	Adams	£285 0
Catley	329 0	Betts	248 0
Neave	312 0	Bell	239 0
Dickson	308 0	Jackson, Enfield*	223 12
Pavey	287 0		

* Accepted.

HERTFORD.—For rebuilding All Saints' Church, Hertford. Messrs. Paley, Austin, & Paley, architects, Lancaster. Quantities by Mr. William Wright:—

Longmire & Co.	£23,124	Patterson	£22,400
Andrews & Sons	23,068	Dove Bros.	22,085
Thompson & Son	23,495	Halliday	21,964
Shillitoe & Son	23,301	H. Norris	21,762
Hodson & Son	22,774	Thornton & Son	21,215
Wilcock & Co.	22,721	Rudd & Son	20,884
Fast	22,713	Hatch & Sons	20,292
J. A. Hunt	22,453	Smith Bros. (accepted)	19,073

LONDON.—For the rebuilding of the police station at Peckham, for the Receiver for the Metropolitan Police District. Mr. John Butler, Architect. Quantities by Mr. W. H. Thurgood:—

	Allowance for Old Material.	Amount of Tender
Hart	£70	£10,898 0 0
Graham	40	10,788 0 0
Ansell	100	10,441 0 0
Higgs & Hill	20	10,280 0 0
Holloway	30	10,093 0 0
Lawrence	—	9,947 0 0
Grover	70	9,907 0 0
Smith	10	9,900 0 0
Perry	50	9,657 0 0
Lathey	130	9,649 0 0
Brass	100	8,942 0 0
Otway	70	8,934 0 0

LONDON.—For enlarging the Garratt-lane School, Duntshill, Wandsworth, by 484 places, and for other work, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement, add.
D. Charteris	£10,406	£217
J. Marsland	10,259	239
Mowlem & Co.	10,258	243
Hart Bros.	10,106	193
W. Downs	10,000	200
J. Tyerman	9,949	243
Holloway Bros.	9,867	217
Holliday & Greenwood	9,765	202
Treasure & Son, Harringay, N.	9,717*	218*

* Recommended by the Works Committee for acceptance.

LONDON.—For alterations and additions to No 111, Bond-street, for Messrs. Ross & Co. Mr. A. M. Ridge, architect:—

Bywaters	£2,161 0	Wetherilt, Lee, & Martin	£1,939 10
Cooper	2,095 0	Jones & Richards	1,946 0

LONDON.—For alterations and additions to the laundry buildings at the Poplar Union Workhouse, for the Guardians. Mr. John Clarkson, surveyor, 146, High-street, Poplar, E.:—

Churmur	£6,579	Holland	£5,986
Harris & Wardrop	6,293	Philips	5,639
Hunt	6,248		

LONDON.—For alterations at the "York and Albany" public-house, Gloucester-gate, Regent's Park, N.W., for Mr. J. F. Holden, Messrs. Saville & Martin, architects, Dacre House, Arundel-street, Strand, W.C.:—

Yardley & Son	£1,229	Martin, Wells, & Co.	£1,148
J. Rider & Son	1,228	Gould & Brand (accepted)	1,118

Pewterer's Work

T. Heath	£153 0	Sanders & Sons	£85 0
J. Edwards	103 15	Watts & Co. (accepted)	84 0

Gasfitter's Work

Vaughan & Brown	£151 10	J. Biggs	£138 0
W. Winn	151 0	E. Pragnell (accepted)	126 0

LONDON.—For converting the old laundry at the infirmary, Raine-street, Old Gravel-lane, E., for the Guardians of the Parish of St. George-in-the-East. Messrs. Wilson, Son, & Aldwinckle, architects, 1, Victoria-street, S.W. Quantities supplied:—

C. L. Cole	£590 7 6	J. R. Hunt	£478 0 0
J. Harvey	564 0 0	W. Lawrence	461 0 0
G. Barker	559 0 0	J. Holland	455 0 0
T. White & Son	494 0 0	W. H. Lorden & Son	449 0 0
G. E. Todd	491 0 0	Wall & Co.*	439 0 0
Norris & Luke	488 0 0		

* Accepted.

LONDON.—Accepted for the erection of a block of shops, Churchroad, Upper Norwood. Mr. W. Theobalds, architect, 26, Budgerow, E.C.:—

S. Barton, Croydon	£5,043 0 0

[No competition.]

LONDON.—For erecting additional workshops and showroom at Hampstead, for Mr. H. Pickett. Messrs. Salter, Issott, & Salter, architects, 13, Phœnix-street, St. Pancras, N.W.:—

H. Davenall	£470	G. A. Elit	£370
A. Salter	397		

LONDON.—For work at 119, Gloucester-terrace, Bayswater, W., for Mr. P. Riddell. Mr. F. Le Rossignol, architect and surveyor, 1, Gresham Buildings, Basinghall-street, E.C.:—

Sanitary and Constructional Alterations.

J. Langham	£265 0	F. Foxley & Co.	£160 16
Benjamin & Robinson	192 4	McMillan & Houghton*	141 0

* Accepted.

Hot Water.

J. Wonter Smith, Gray, & Co (accepted)	£93

LONDON.—Accepted for alterations at the Parish-street Workhouse, Bermondsey. Messrs. Newman & Newman, architects:—

Maxwell Bros., Limited	£155 0 0

PLYMOUTH.—Accepted for the erection of stables, coach-house, &c., at Woodland-terrace, for Mr. Geo. Browse. Mr. Jas. Harvey, architect, Bedford Chambers, Plymouth:—

Pearn & Sons (Plymouth)	£200 0 0

PORTSMOUTH.—Accepted for the erection of part of nave of the new church of Corpus Christi, Portsmouth, for the Right Rev. John Virtue, Bishop of Portsmouth. Mr. W. Lunn, architect, Great Malvern:—

Messrs. W. R. & C. Light, Portsmouth	£1,447 0 0

SNODLAND (Kent).—For the erection of the "Eustace Hook Memorial" villa almshouses, Waghorn-road, Snodland, Kent, for Miss M. M. Hook. Mr. Geo. R. Cobham, architect, 1 and 3, Edwin-street, Gravesend:—

Black & Sons	£1,324 0 0	Dover, Hodges, & Co.	£1,045 17 0
Harry Seager	1,209 18 6	R. Avard	1,013 0 0
W. Tuffee	1,189 0 0	C. J. Slade	1,000 0 0
C. M. Dering	1,097 0 0	E. G. Brown	960 0 0
Multon & Wallis	1,069 0 0	W. P. Goose	944 18 4
W. H. Archer	1,053 0 0	J. Willford, Snodland*	830 0 0

* Accepted.

SUTTON (Surrey).—For the erection of a cottage, &c., at the Sewage Works. Mr. E. W. Crickmay, Surveyor, Local Board Offices, Sutton, Surrey:—

Geo. Wade	£629	Walter Lawrence	£375
Hy. Adams	499	A. H. Harris, Blackwater, Sutton, Surrey*	375
Wm. Akers & Co.	493		
R. J. Humphris	468		

* Accepted.

SUTTON (Surrey).—For the erection of four shops and dwelling-houses, High-street, Sutton, Surrey, for Mr. W. Keats. Mr. F. G. Burstow, architect, Sutton. Quantities not supplied:—

H. Adams	£3,035	Balchin & Shopland	£2,767
J. B. Potter	2,999	F. Wyatt	2,720
G. Burrage	2,973	J. Stone*	2,710
A. H. Harris	2,970		

* Accepted.

TORQUAY.—For the construction of a brick sewer, manholes, &c., Market-street, for the Local Board. Mr. H. A. Garrett, Engineer, Town-hall, Torquay, South Devon:—

W. C. Haddock	£941 0 0	G. Green	£760 0 0
Cochrane & Son	850 5 0	W. Stedham, Ellacombe, Torquay*	614 4 2
S. Peck	836 10 0		
J. Shaddock	781 1 0		

* Accepted.

[Engineer's estimate, £646. 5s. 2d.]

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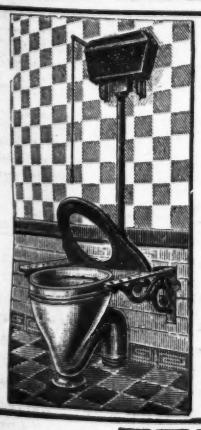

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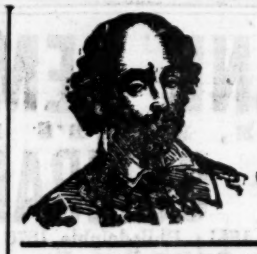

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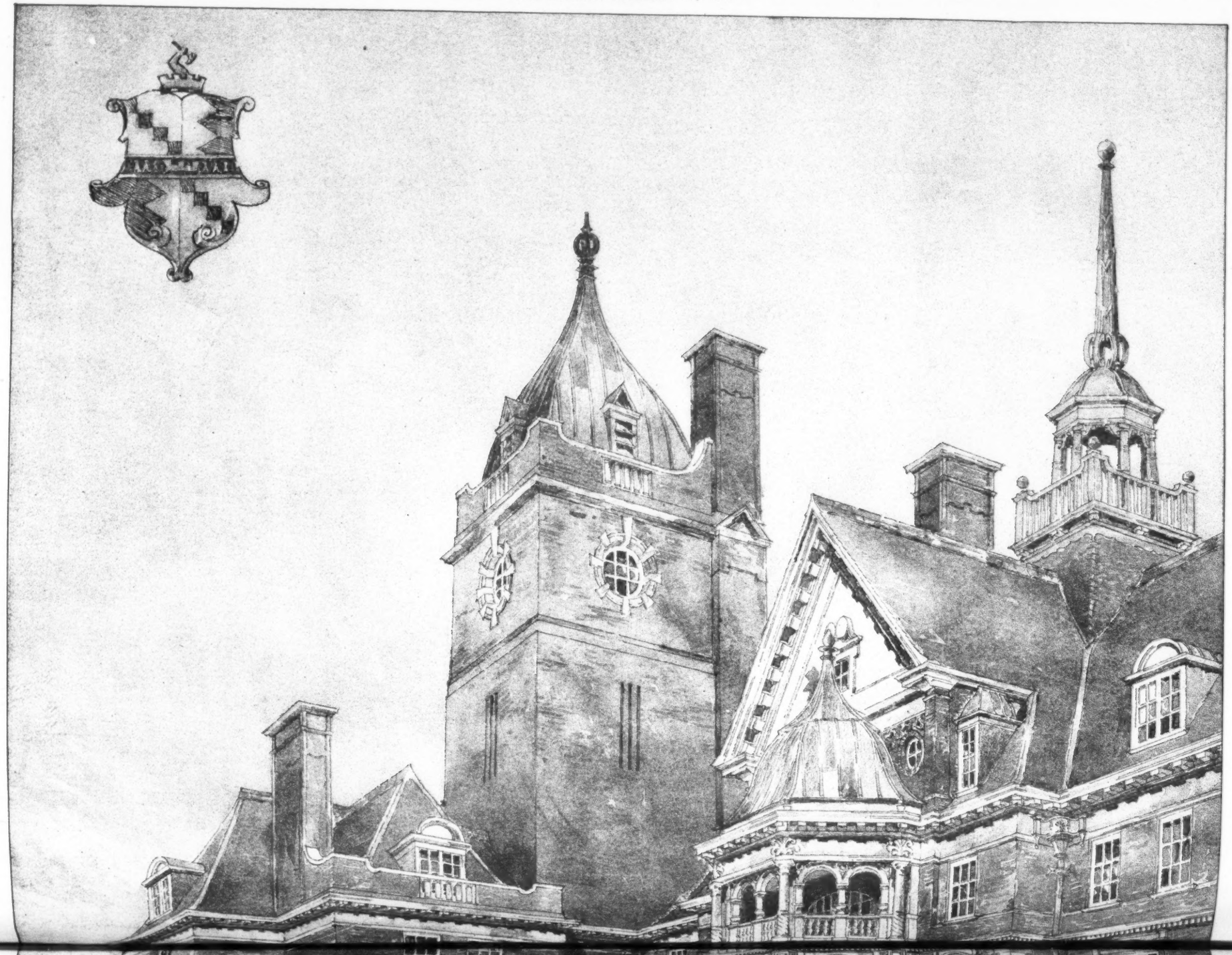

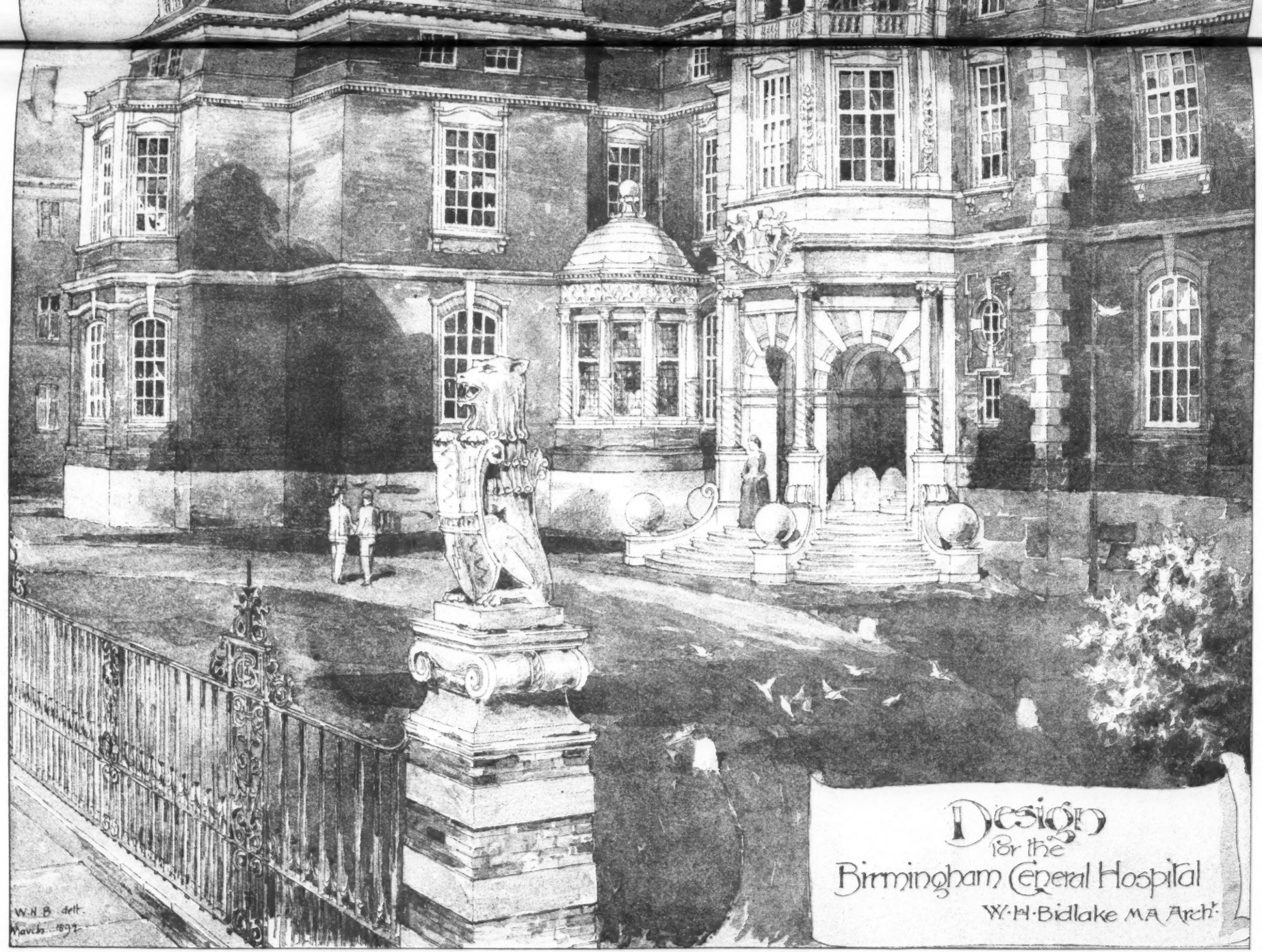

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Royal Academy Exhibition, 1892.

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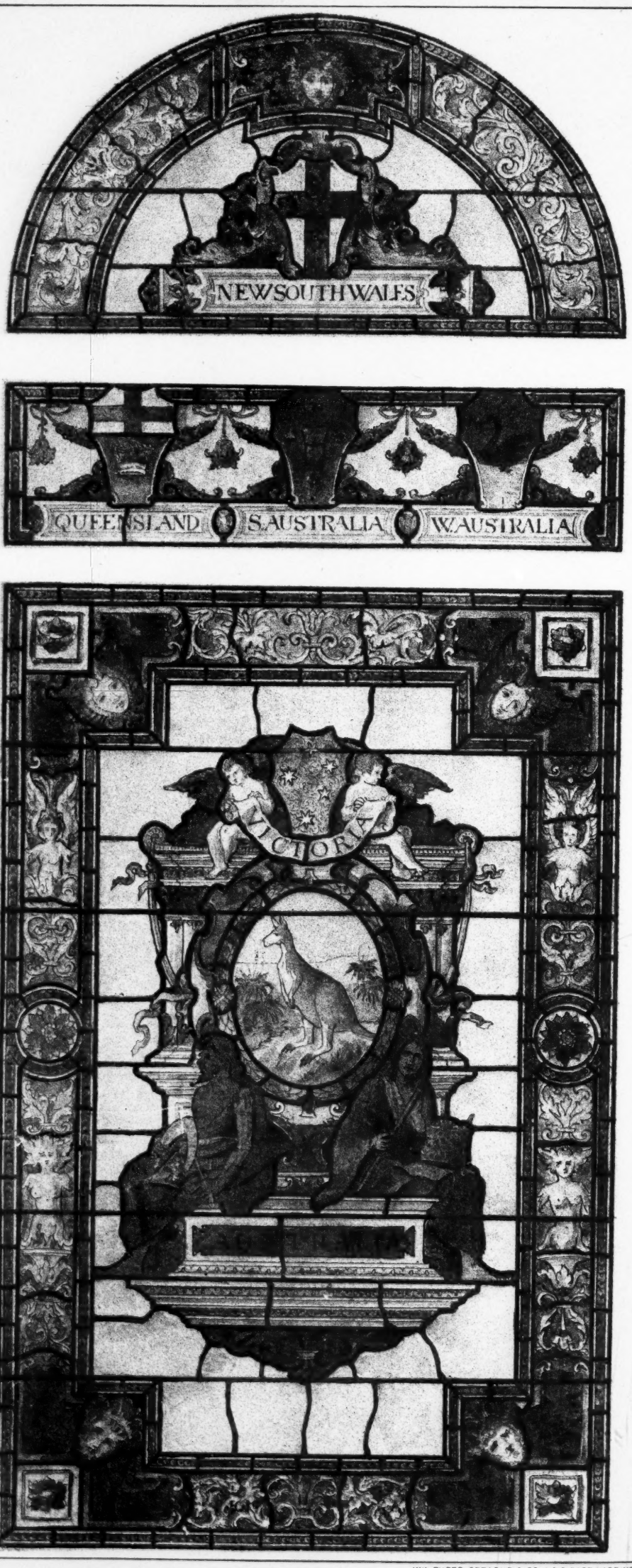
Royal Academy Exhibition, 1892.

HALL, BULLER'S WOOD, CHISLEHURST.—Mr. Ernest Newton, Architect

Royal Academy Exhibition, 1892



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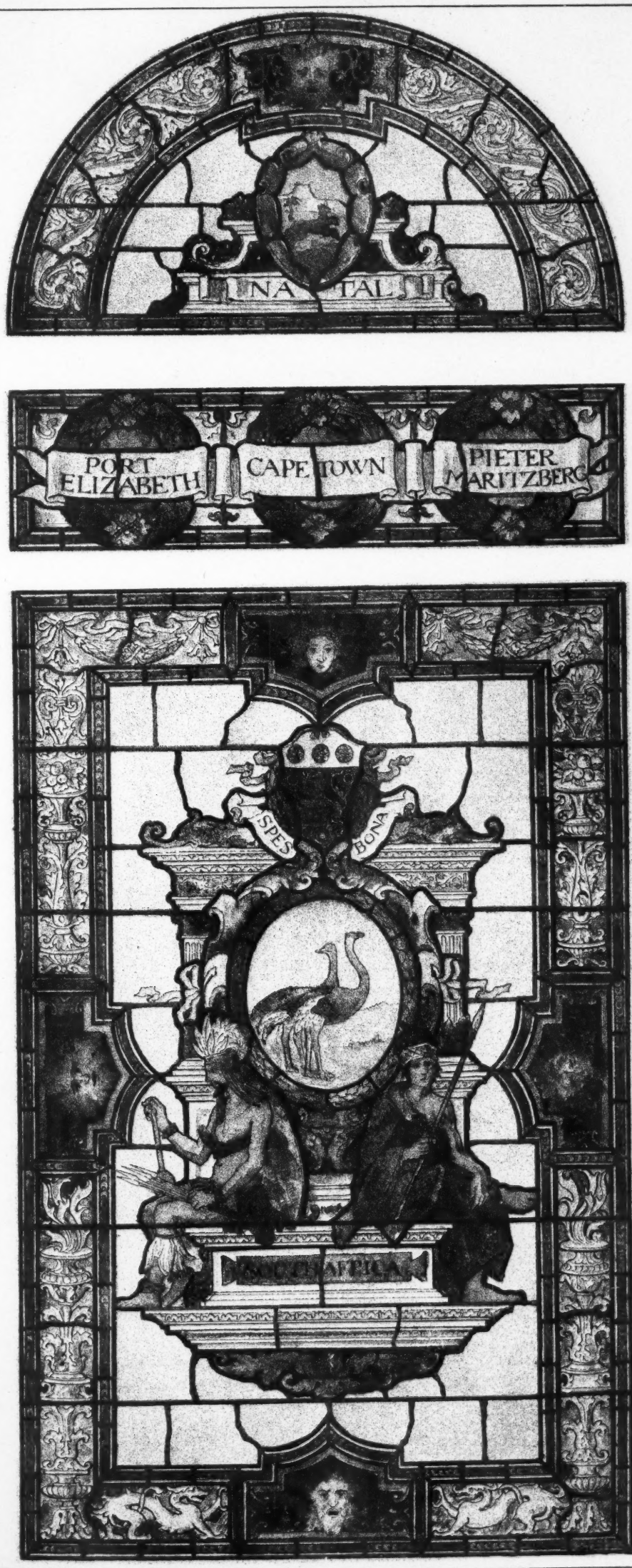

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